

B E E T L E S

O F T H A I L A N D

2nd Edition



แมลงปีกแข็งในประเทศไทย

ENGLISH EDITION



B E E T L E S

O F T H A I L A N D

SIAM INSEC-ZOO & MUSEUM
Mae Rim, Chiang Mai, Thailand.

2nd Edition

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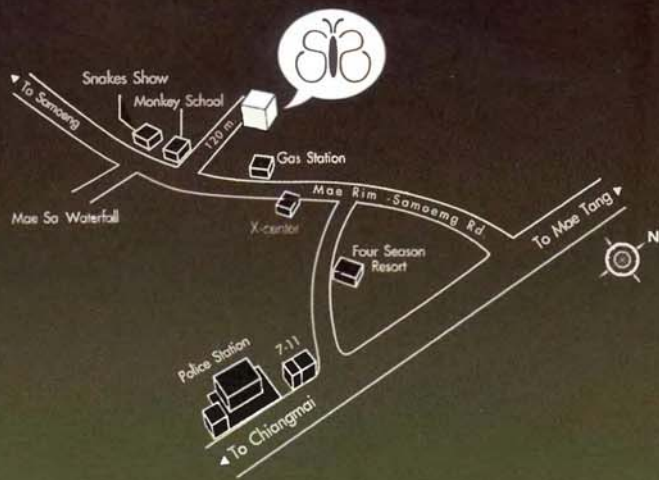
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กว่า 30 ปี ที่สวนสัตว์แมลงสยาม (SIZ) เก็บสะสมตัวอย่างแมลงจากทั่วโลกมารวบรวมไว้เป็นพิพิธภัณฑ์แมลง ที่นี่ยังเป็นสถานที่ศึกษาวิจัยเกี่ยวกับแมลง มีสวนผีเสื้อขนาดใหญ่และเพาะเลี้ยงแมลงต่างๆ เพื่อรวบรวมและคัดเลือกผลงานที่น่าสนใจ เผยแพร่ผ่านทางเว็บไซต์ www.malaeng.com

Siam Insect-zoo (SIZ) is a place for preserving our private worldwide collection of insects which has been done for more than 30 years ago. We are still enthusiastic in studying insects and love to see them especially when they are alive. This will be a good opportunity for the public to see our insect displaying. We have included insect research in our farm in order to gain information for distributing through our www.malaeng.com as well as publishing some insect books both in English and Thai for sales.



พิพิธภัณฑ์...

พบกับนิทรรศการแมลงและตัวอย่างแมลงหายากนานาชนิดจากทั่วทุกมุมโลกที่ถูกจัดแสดงไว้อย่างเป็นหมวดหมู่ ไม่ว่าจะเป็น ผีเสื้อ ผีเสื้อกลางคืน แมลงปีกแข็ง ตั๊กแตน ตัวงู ฯลฯ

Our worldwide collection of insects includes those peculiar in shaped, colorful, beautiful and variable in sized especially those from Thailand. The main groups are such as butterflies, moths, beetles, grasshoppers, cicadas, bugs, ants, wasps and bees, etc.

(MUSEUM)

เหล่าแมลงมีชีวิต

เรียนรู้และเพลิดเพลินไปกับความมหัศจรรย์ของเหล่าแมลงมีชีวิต เช่น ตัวงูชนิดต่างๆ ตั๊กแตนกิ่งไม้ ตั๊กแตนใบไม้ ผีเสื้อกลางคืน ผีเสื้อกลางคืน ที่อยู่ระหว่างการศึกษาค้นคว้าและเพาะเลี้ยง

There are many live insects in breeding and rearing cages including stags beetles, many scarab beetles, walking leaf insects and walking stick insects as well as butterflies and moths. Many of them are still unknown for the young stages of live. Therefore we plan to breed and learning their life cycles in order to conserve them for the future.

(LIVE INSECTS)



SIAM INSECT-ZOO

zone map

open daily 9am-5pm
www.malaeng.com





My first edition of this book was published in 2002 and was also the first book of beetles available in Thailand. Today it is out of print, making it a rare collectors' item, with demand still strong from academicians and beetle enthusiasts alike. To meet this demand, I decided to publish a revised edition, emphasizing the species content and the possibility of additional species for all those beetle families. This edition contains 509 species as compared to the first edition which included only 362 species and subspecies. Also it is an opportunity to correct identification errors. Finally, the layout of the book has been redesigned to follow the style of my other publications of the same series, viz. the Butterflies of Thailand, [2007] which was printed at the end of 2006 but available only in early 2007.

This book is to support the challenging business of the Siam Insect-Zoo and Museum at Mae Rim, Chiang Mai, owned by my eldest son, Mr. Suttha Ek-Amnuay. The business of the first 2 years did not turn out as expected and income could not cover monthly operating expenses. Nonetheless, we have kept on investing and expanding a new breeding and rearing area for beetles, which is the first of its kind in Thailand. We are learning the intricacies and complexities of insect life cycle and rearing by hands-on hard work, especially the beetles. The consequence of our effort and achievement enables us to produce another book, the first guide book on beetles in Thai, *Breeding and Rearing Beetles*, 120 pp. in full-color. This small book aims to stimulate the interests of the Thai youths to these amazing creatures.

To write articles on beetles which are natural creatures, all information must be accurate and reliable. The time required for traveling into the forests and the strict rules of searching and collecting insects in national parks and wildlife sanctuaries are limiting factors in studying and obtaining good specimens. Therefore many species known from the literature are almost impossible to obtain specimens for breeding and taking original photos. I would like to express my regret in skipping some of those species in this book especially some rare stag beetles and jewel beetles. The beetle studies in the South of Thailand are also rather poor. Information on the very few specimens known, have been heavily relied on from the specimens from Malaysia. This shortcoming should be improved in the future. Hopefully, this current second edition of the *Beetles of Thailand* will benefit the insect studies of the world and Thailand.

Pisuth EK-AMNUAY

Acknowledgements

Although I have built up my own insect collection for the last thirty years, many rare beetle species of the country appearing in this book are from particular museums and collections such as those of St. Gabriel's College, Kasetsart University and private collections of people whose names appear below and to whom I am indebted and fully appreciate their help and contributions.

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T10 ♂ T11 ♀ B15a ♂ B15b ♂ B16a ♂ B16b ♂ B35a ♂ B52 ♂ B56 ♂

Insect Museum of the Dept. of Entomology, Faculty of Agriculture, Kasetsart University.

S36 ♂ L12 ♀ L14 ♀ L15 ♂ B38 ♂

Dr. Valili ROJANAVONSE my former adviser from Kasetsart University.

Photos of eggs, larvae, pupa of *Sternocera* sp. p. 256-257.

Tesuo MIZUNUMA and Shinji NAGAI, *The Lucanid Beetles of the World*, 1994.

L1 ♂ L5 ♂ L19b ♂♀ L27 ♂ L30 ♂ L41 ♂

Kaoru SAKAI and Shinji NAGAI, *The Cetoniine Beetles of the World*, 1998.

C1 ♀ C6 ♂ C10 ♀ 19 ♂♀ C29 ♂♀ C38 ♂ 40 ♂♀ C44 ♂ 47b ♂♀

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B47 ♂♂ B53 ♀ B54 ♂ B60 ♂♂ B61 ♂♀ B62 ♂ B64 ♂ B65 ♂ B66 ♂ B67 ♂

B68 ♂♂

Dr. Kazuo KAWANO an expert on Dynastinae and Lucanidae, Faculty of Agriculture, Kobe University.

L11b ♀ L58 ♂♀ L13 (amphiodont) L56b ♂

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SOME COLLECTING LOCALITIES

North Thailand (NT)

Chiang Mai	Chiang Dao
	Doi Inthanon
	Doi Pha Hom Pok
	Doi Saket
	Doi Sang
	Doi Suthep (Doi Pui)
	Fang
	Hang Dong
	Mae Rim
	Mae Suay
	Mae Taeng
	Omko
	Phrao
	Samoeng
	San Kamphaeng
	San Pa Tong
	Sansai
Chiang Rai	Doi Mae Salong
	Wiang Pa Pao
Lampang	Mae Mo
	Mae Tha
	Wang Nuea
Lamphun	Ban Hong
Mae Hong Son	Mae Sariang

Nakhon Sawan

Nan	Doi Phu Kha
Phayao	
Phrae	Wang Chin
Tak	Mae Sot
	Umphang
Uthai Thani	Huey Kha Khaeng

Northeast Thailand (NET)

Chaiyaphum	Phu Khieo
Khon Kaen	Chum Phae
Nakhon Ratchasima	Khao Yai
	Pak Chong
	Pak Thong Chai
Loei	Phu Kradung
Mukdahan	
Phetchabun	Khao Khlor
	Nam Nao
Sakhon Nakhon	Phu Phan
Ubon Ratchathani	Pha Taem

Central Thailand (CT)

Bangkok	Bang Kae
	Bangkhen
Nakhon Nayok	Nang Rong Waterfall
	Wang Takrai
Nakhon Pathom	Kamphaeng Saen
Pathum Thani	Rangsit
Saraburi	Muak Lek
	Phu Kae
	Phra Buddha Chai

Central, East Thailand (ET)

Chanthaburi	Khao Kitchakud
	Khao Soi Dao
	Trok Nong Waterfall
Chon Buri	Khao Khieo
	Pattaya
Rayong	Klaeng
Trat	Koh Chang
	Khlong Yai

Central, West Thailand (WT)

Kanchanaburi	Kerng Krawia
	Khao Kala
	Phu Toei
	Sai Yok
	Tham Than Lod
	Thong Pha Phum

South, Peninsular Thailand (PT)

Chumphon	Tah Sae
Krabi	Khao Phanom Bencha
Nakhon Si Thammarat	
Narathiwat	
Phetchaburi	Kaeng Krachan
	Khao Bandai It
	Nong Ya Ploeng
Phuket	
Prachuab Kiri Khan	Hua Hin
	Huey Sat Yai
Ratchaburi	
Ranong	Khlong Nakha
	Kampuan
Songkhla	Hat Yai
Surat Thani	Koh Samui
Trang	Khao Chong
Yala	Than To

HOW TO USE THIS BOOK

The species description of each beetle includes the full scientific name and the Thai name. The latter is a simple guide for Thai children to remember instead of using the long scientific name from the beginning. I have limited Thai word in order to make this book a more international guidebook. Next to those names, the external morphological characteristics of the beetle such as shape of the body part including head, prothorax and abdomen, color, size in mm, habits, habitats, distribution and some records of locality found have been given. The records are mainly based on my own specimens which are places visited and province names in general. However, in some new and rare species, the accurate data of sex, collection date and sites have been provided.

The photos illustrated in this book have been prepared mainly from those in my own collections, the rest from other private collections as well as from insect museums. The aim of publishing this book is to use it as a tool in helping anyone interested in beetles to identify and to utilize the knowledge for further scientific and practical purposes.

Butterfly Names

The common name or the popular name in Thai is included. This mainly follows the existing names by many authors, insect traders or local language. In the case where a name is not available, I then fill the gap by proposing a name comparing it to the existing ones. However, there is no specific rule for creating a common name and sometimes a beetle may be called differently amongst the authors.

Scientific name is generally used worldwide. The scientific name should consist of a generic name (genus) and a specific name (species), with or without the author's name, as well as the published year. The author's name should be used in full, except the two well-known authors, Linnaeus and Fabricius, where their names might be shortened to L. or F. The generic name, when referred to for the second or the third time in the same article, can be abbreviated to writing only the first alphabet of the genus but using the full species as usual. Another abbreviated use is to refer to only the genus but not specifying any species. Thus, the genus is written followed by sp. (for a single species), or spp. (for more than one species), such as *Prosopocoilus* sp. or *Prosopocoilus* spp.



The principal categories in animal classification are Phylum, Class, Order, Family, Genus, Species and Subspecies, as in the above mentioned example. The classification of this beetle can be specified as follows:

Phylum: Arthropod (jointed-legged invertebrates)

Class: Hexapoda (6-legged arthropods)

Subclass: Insecta

Order: Coleoptera (beetles)

Family: Lucanidae (always ending with –idae, while Subfamily ends with –inae)

Scientific
name

{ Genus: ***Prosopocoilus***
 { Subgenus: (***Cladognathus***) (always in parenthesis)
 { Species: ***giraffa***
 { Subspecies: ***giraffa***
 Author name, year: (Olivier, 1789)

Please note that one species may have two, three or more different scientific names, but only one is the valid name and others are synonyms. Two different species can not have the same scientific name. Because animals of the same species are not only similar in structure and physiology, but they are also capable of interbreeding and producing fertile offspring.

The scientific name normally follows a **binomial system**, i.e. there are two names, the generic name (genus, always starting with the upper case or capital letter) and the second the specific name (species, begins with lower case letter). **Trinomial system**, (three part names) are used in well advanced classification by having a third subspecific name (or subspecies). Generic, specific and subspecific names are always **italicized** or **underlined**. The name of scientist (the author) who first described and named the species for binomial system, or subspecies for trinomial system, is attached to the end of the scientific name and sometimes followed by the first year of publication. Subgeneric name (if present) is always in parenthesis and comes after the generic name.

Of note is the author's name. If the author's name is in parenthesis, it means that the scientific name was used in a different generic name, but was transferred to the present generic name. If the author's name is not in a parenthesis, its generic name has never been changed and has been valid from the beginning.

An example of the full scientific name of the giraffe stag beetle:



Prosopocoilus (Cladognathus) giraffa giraffa (Olivier, 1789)
(genus) (subgenus) (sp.) (ssp.) (author name, year of publication)

Other scientific name used for this beetles are as follows:

- Lucanus giraffa*** Olivier, 1789
- Lucanus (Macrognathus) giraffa*** Hope & Westwood, 1845
- Cladognathus giraffoides*** Burmeister, 1847
- Cladognathus giraffa*** Gemminger & Harold, 1868
- Cladognathus conficius*** de Lisle & Chujo, 1964
- Prosopocoilus giraffa*** Kawano, 1988
- Prosopocoilus giraffa giraffa*** Mizunuma & Nagai, 1994

The above listing shows that the generic name has been changed to its right position which is ***Prosopocoilus***. In the case of the generic name change, then the author’s name is placed in parenthesis.
The first specific name used in the first publication was ***giraffa*** by Olivier in 1789. Therefore the correct scientific name is ***Prosopocoilus giraffa*** (Olivier, 1789) or ***Prosopocoilus giraffa giraffa*** (Olivier, 1789)

The two sexes of most beetles have differing, distinctive forms of body or they are dimorphic. The described data will refer to both male and female differently. However, most of Cetoniinae, Rutelinae and Melolonthinae have one body form or they are monomorphic and separation of the sexes is more difficult. Sex in the photo plates is indicated by a sex symbol.

Length

The total length of a beetle is measured from the longest part of the mouth parts, or any prominent growths on the prothorax or head, to the end of abdomen of the beetle, in mm. The length of a specimen illustrated in the colored plates generally is actual-size. Anyhow some specimens illustrated are greatly magnified especially those of small sized beetles. Subfamily Cetoniinae, then the degree of enlargement is shown, i.e. 1.5x which is 1.5 times of the actual-size.

Abbreviation used

The running number of each family beginning with an abbreviation of an alphabet following by the number of species. Those alphabets are T=tiger beetle, Cicindelidae; L=Lucanidae; P=Passalidae; S=Scarabaeidae; C=Cetoniinae, Scarabaeidae; B=Buprestidae; M=Meloidae; A=Cerambycidae.

Some other abbreviations and symbols used in the text and plate are as follows:

sp.	species (singular)
spp.	species (plural)
ssp.	subspecies
mm	millimetre (s)
Host	If any, scientific name is presented, following by a Thai plant name, in some case for a simple plant only the common name in English is mentioned.

△	underside of the beetle
♂	male
♀	female

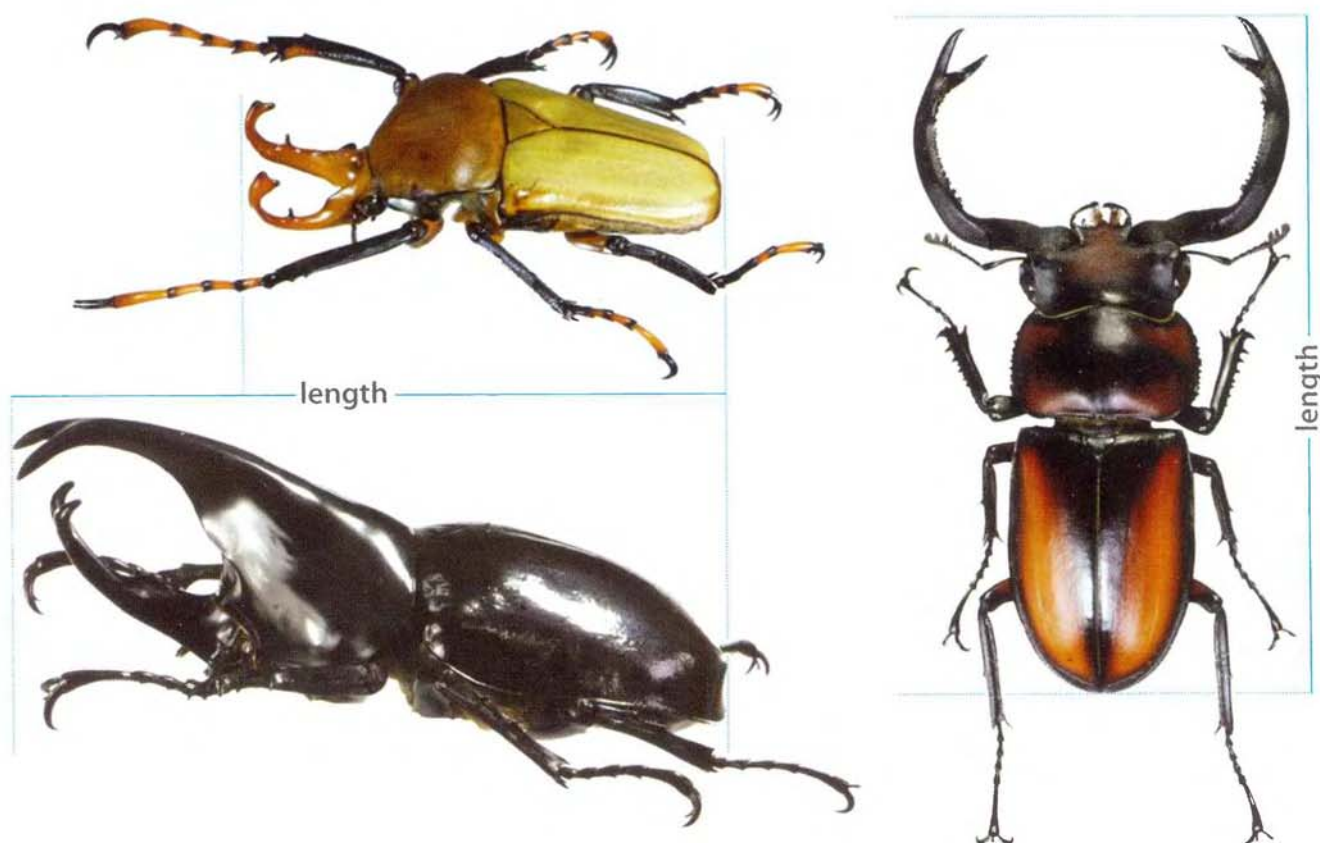


Figure 1. How to measure the beetle specimens.

Insects are the largest group of animals in the world. The numbers of insects are more or less the same amount as the numbers of other animals all together. The beetles which have been described in the world are about four hundred thousands species which are about 40 % of total known insects of the world.

Thailand situated in the tropical rain forests with rather high humidity and warm climate throughout the year especially in the mountainous areas where there are many good forests. With these suitable climatic conditions which are very good supporting of livings, we believed that there are several thousands of beetles species occur in Thailand. The insect study in this part of the world will never be finished as long as the green forests are still there. Many new beetles species from Thailand have been described every years and a large number of them is still unidentified.

Many world entomologists are enthusiastic to come and search in South East Asia including Thailand. We can see that the recent publications on the insects of the world are better than in the pass ten to twenty years ago. There are many beetles have been described and published regularly mostly by Japanese teams. These are stimulating the interest of the people to pay more attention on them. People who are interesting have spent more efforts for searching and learning not only the adult, but also the young stages and trying to breed them as well.

The recently discovered larval stages of the yellow five-horned beetles (*Eupatorus gracilicornis*) and can breed in the lab from the north of Thailand for example, showing the new improving of scientific study of insects. A little bit by bit we are learning about the beetle living habits and habitats especially of some rare species could be good or bad for the conservation of the beetles. It is depending on how we look at it. In the sake of conservation view the searching to the beetle habitats can be harmful to the beetles in destroying their natural breeding sites, but if that searching for learning more to prove something for the nature. Then we leave them live naturally. This could be a benefit for human in order to find the way to protect them correctly.

The beetles undergo complete metamorphosis by having four stages of the development which are the egg, larva, pupa and adult. However, some beetles such as blister beetles, Meloidae undergo hyper-metamorphosis which is a type of complete metamorphosis, but the different instars of the larval stage having two or more different types of larvae.

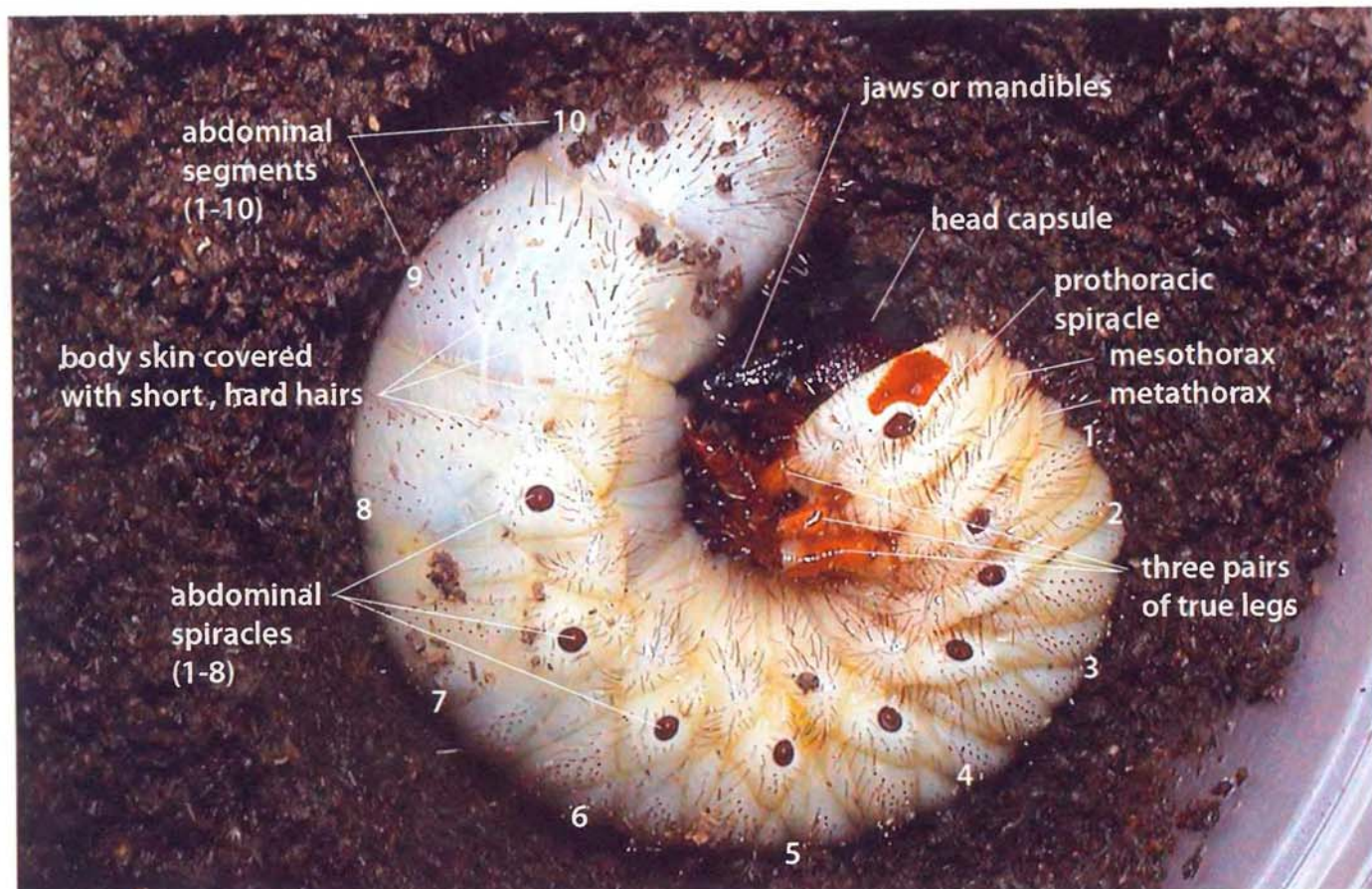


Figure 2. A larva of *Eupatorus gracilicornis* a typical Scarabaeiform type larva.



There are four different types of larvae of insects. The larvae of beetles represent all types of them.

1. **Scarabaeiform** (white grub-like), body usually curved, C-shaped-like, the head well developed usually brown to nearly black, thorax and abdomen white with thoracic legs, but without abdominal pro-legs, many beetle larvae found in this type such as Scarabaeidae, Lucanidae and Passalidae.

2. **Campodeiform** (resembling diplurans an insect in Order Diplura), body elongate and somewhat flattened, cerci and antennae usually well developed, with thoracic legs, larvae usually active movement. This type occurs in such as Coccinellidae and Meloidae.

3. **Elateriform** (wireworm-like), body elongate, cylindrical, thoracic legs short, the type of click beetles, Elateridae.

4. **Vermiform** (maggot-like), body elongate and wormlike, the type of long-horned beetles, Cerambycidae usually large and long body, with a well developed head, without legs, but some long-horned beetles also with short thoracic legs.

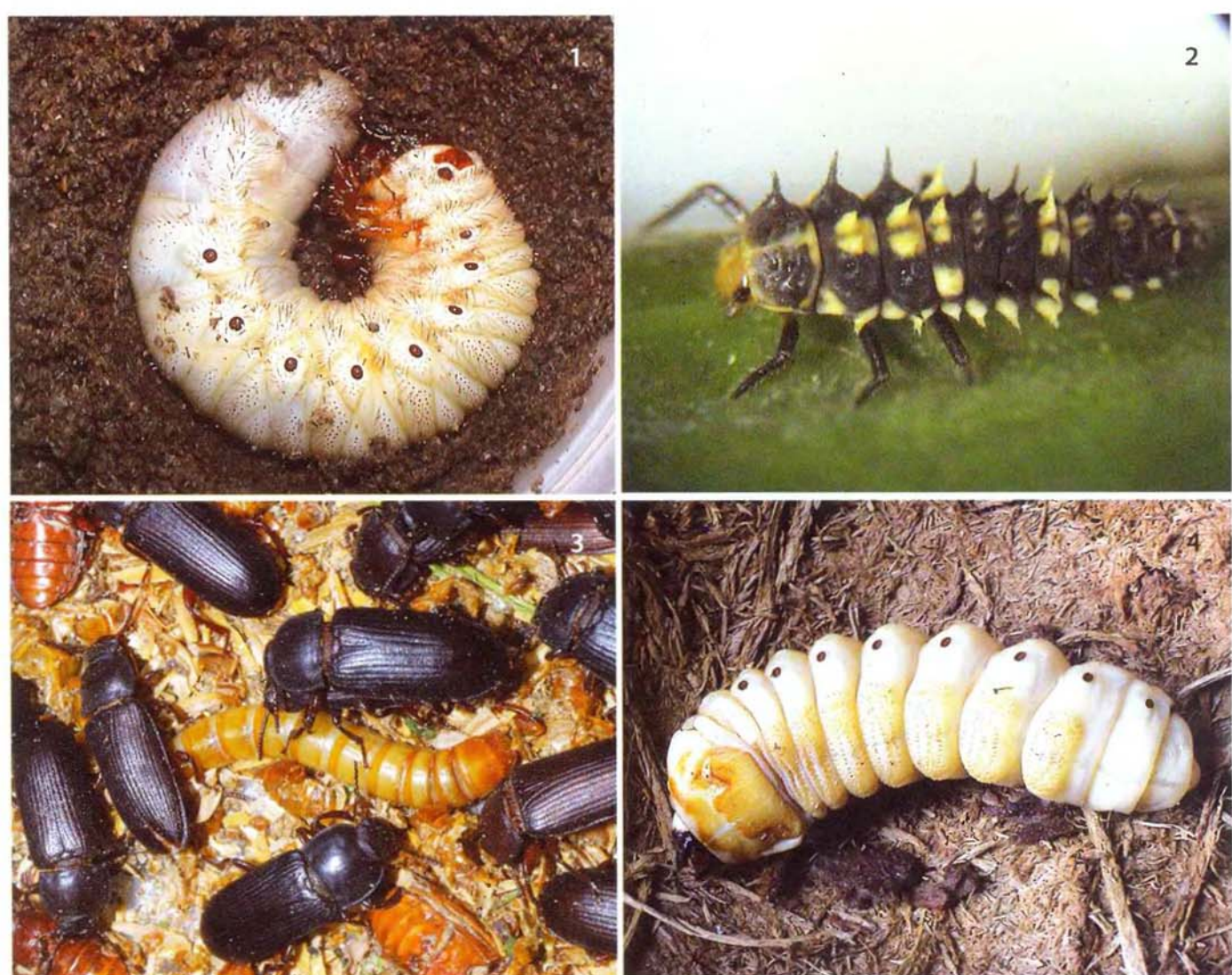


Figure 3. Larval types of beetles, 1. *Eupatorus gracilicornis*(Scarabaeiform), 2. *Monochilus sexmaculatus* (Campodeiform), 3. *Tenebrio molitor* (Elateriform), 4. *Pseudomeges marmoratus*.

TYPES OF ANTENNAE

The antennae are a pair of segmented appendages located on the head, usually between or below the compound eyes. The basal segment, the segment 1 is called the scape, the second segment the pedicel and the rests the flagellum. The following types of antennae are found in the beetles.

1. **Filiform** (thread-like), the segments nearly uniform in size and usually cylindrical, the basal segments broader than the apical segments, antennae of Cicindelidae, Cerambycidae, Disteniidae, some Meloidae (*Epicauta*).

2. **Serrate** (saw-like), the segments particularly those in the apical half or two thirds of antenna are more or less triangular shaped, for example in Buprestidae and Elateridae (click beetles).

3. **Clubbed**, the segments increasing in diameter distally.

- **Clavate**, the terminal segments increasing gradually, rather straight, for example in Meloidae (*Mylabris*), Chrysomelidae (lady bird beetles).
- **Curved clavate**, for example, Passalidae.
- **Capitate**, the terminal segments suddenly enlarge, for example in Nitidulidae (sap beetles).
- **Lamellate**, the terminal segments, usually 3-4 segments expanded laterally into oval or elongate lobes capable of being united into a compact ball, for example in Scarabaeidae.
- **Flabellate**, the terminal segments have long, parallel-sided, sheath-like or bamboo leave-like lobes, extending laterally, for example in Rhipiceridae (cidar beetles).

4. **Geniculate** (elbowed), with the first segment long and the following segments small and going off at an angle to the first, for example in Lucanidae (stag beetles).

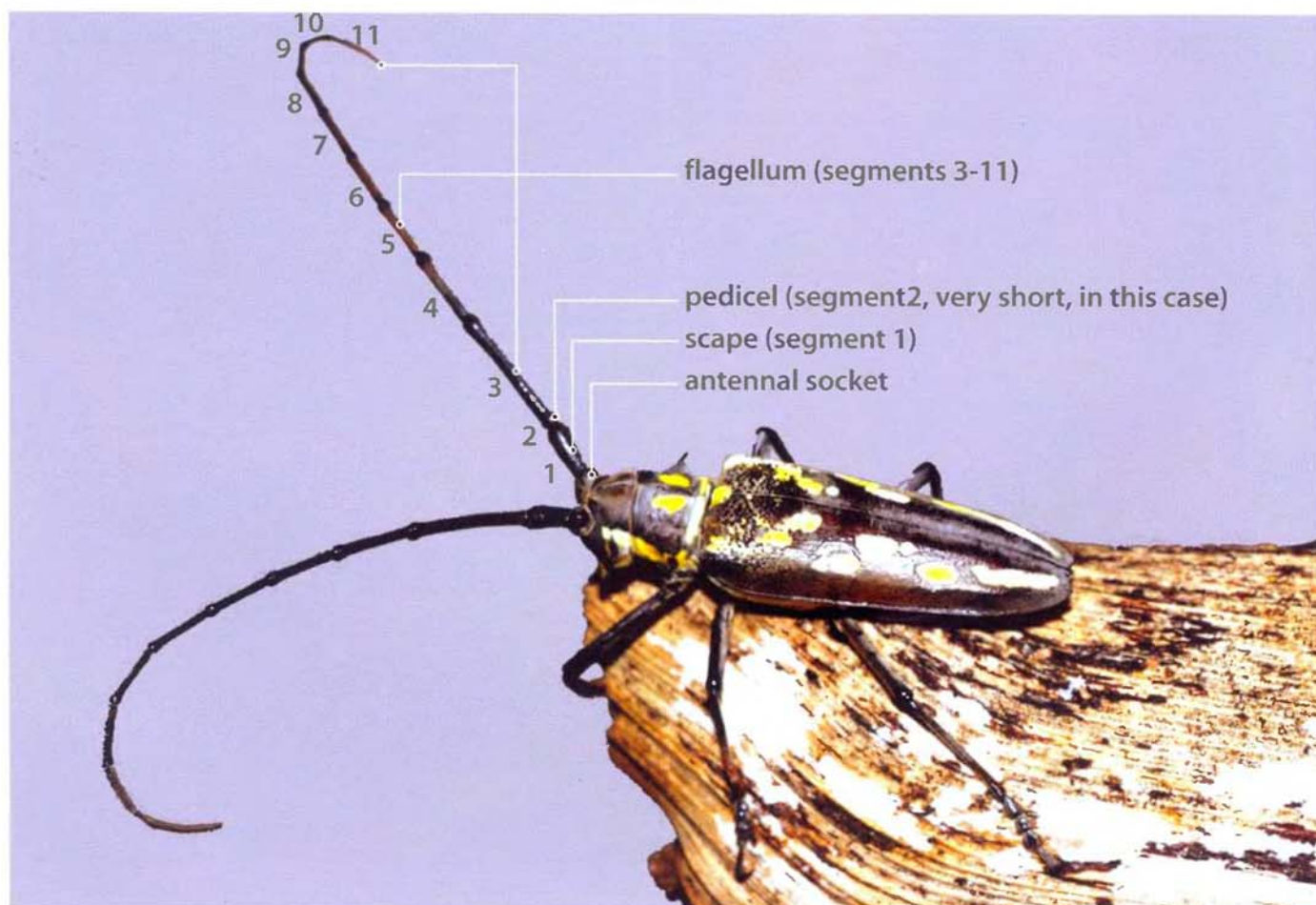


Figure 4. Filiform antennal type Cerambycidae, *Batocera lineolata*.



Figure 5. Types of antennae found in beetles: 1. Filiform (Cerambycidae), 2. Serrate (Buprestidae), 3. Moniliform (*Eletica* sp., Meloidae), 4. Clavate (*Mylabris* sp., Meloidae), 5. (Curved) Clavate (Passalidae), 6. Capitate (Endomychidae), 7. Lamellate (Scarabaeidae), 8. Flabellate (Rhipiceridae) and 9. Geniculate (Lucanidae)



Figure 6. Filiform antennal type in the two popular carabids: 1. Coppery-bordered ground beetle, *Mouhotia planipennis* Pouillyd; 2. Dried-leaf beetle phyllodes or violin beetles, *Mormolyce phyllodes* Hegenbach.

CLASSIFICATION

The basically method use for beetle classification is the comparison of the body characters, either they are similar or different. The three basic parts of the body are head, thorax and abdomen. The details on each body part such as shape, size, color and appendages are very important, however, sometimes the genital processes have to be compared as well.

Most beetles have two pairs of wings. The front wings thickened and hard, usually meeting in a straight line above the middle of the body while resting, covering the hind wings which are membranous and folding beneath the front wings. The front wings of beetles are called **elytra** (singular **elytron**) where the name of the order, Coleoptera come from. The elytra is a greek word means sheath-wing.

ORDER COLEOPTERA (beetles) – in this book

SUBORDER ADEPHAGA (which are all carnivorous beetles)

FAMILY CARABIDAE (ground beetles)

FAMILY CICINDELIDAE (tiger beetles)

SUBORDER POLYPHAGA (various beetles)

SUPERFAMILY SCARABAEOIDEA

FAMILY LUCANIDAE (stag beetles)

FAMILT PASSALIDAE (bess beetles)

FAMILY SCARABAEIDAE (scarab beetles)

SUBFAMILY DYNASTINAE (rhinoceros beetles)

SUBFAMILY EUCHIRINAE (star-spotted beetles)

SUBFAMILY COPRINAE, SCARABAEINAE (dung beetles or tumblebugs)

SUBFAMILY GEOTRUPINAE (earth-boring dung beetles)

SUBFAMILY MELOLONTHINAE (june beetles, chafers)

SUBFAMILY RUTELINAE (shining leaf chafers)

SUBFAMILY CETONIINAE (flower beetles and others)

SUPERFAMILY BUPRESTOIDEA

FAMILY BUPRESTIDAE (jewel beetles, metallic wood-boring beetles)

SUBFAMILY JULODINAE

SUBFAMILY POLYCESTINAE

SUBFAMILY CHRYSOCHROINAE

SUBFALIMY BUPRESTINAE

SUBFAMILY AGRILINAE

SUBFAMILY GALBELLINAE

SUPERFAMILY TENEBRIONOIDEA

FAMILY TENEBRIONIDAE (darkling beetles, mealworms)

FAMILY MELOIDAE (blister beetles)

SUPERFAMILY CHRYSOMELOIDEA

FAMILY DISTENIIDAE

FAMILY CERAMBYCIDAE (long-horned beetles)

SUBFAMILY PRIONINAE

SUBFAMILY PHILINAE

SUBFAMILY CERAMBYCINAE

SUBFAMILY LAMIINAE

FAMILY TRICTENOTOMIDAE (false long-horned beetles)

FAMILY CHRYSOMELIDAE (leaf beetles)

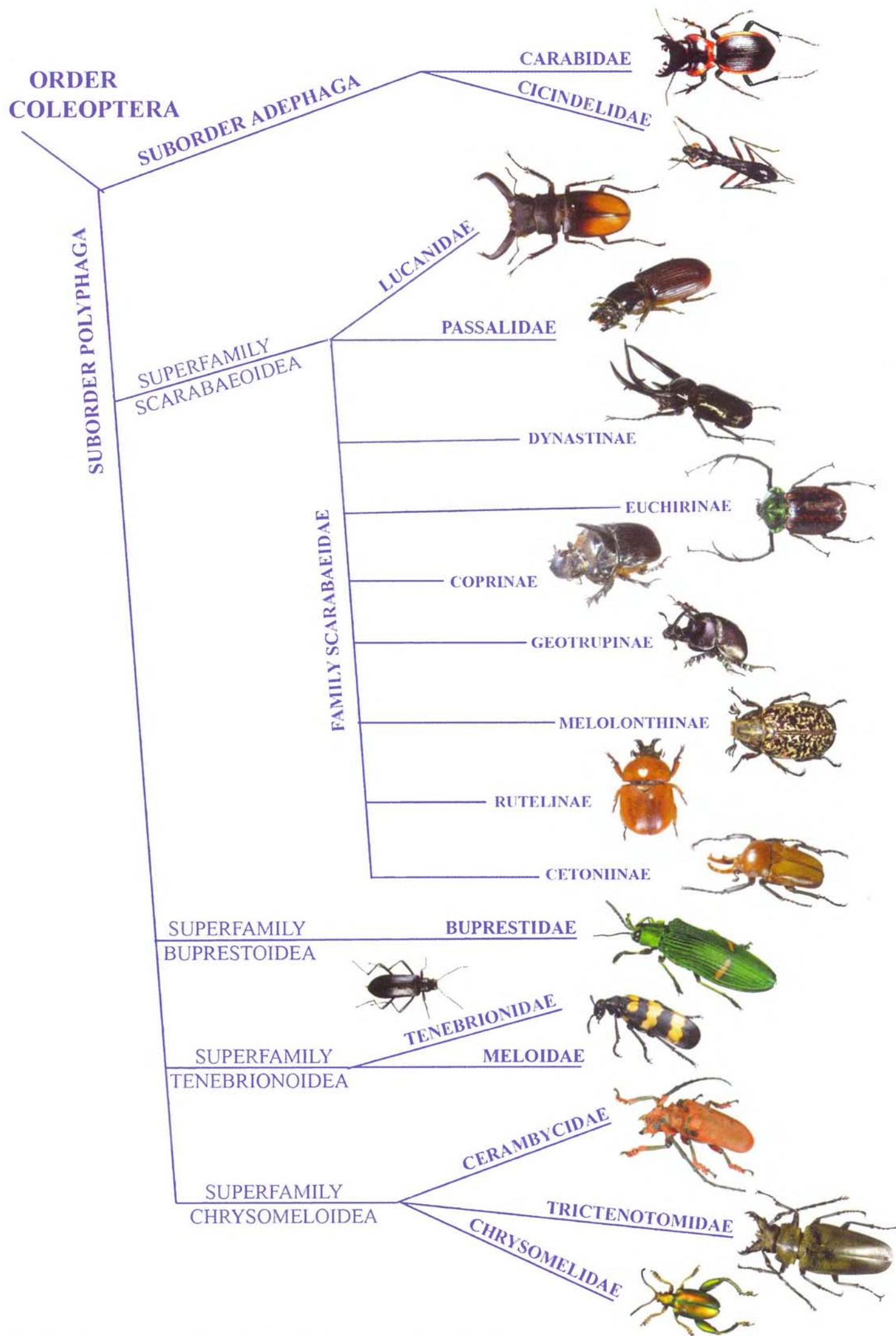


Figure 7. A classification chart of beetles illustrated in this book.

KEY TO SUBORDER, FAMILY AND SUBFAMILY

1	First visible abdominal sternum divided by hind coxae, the posterior margin of the sternum not extending completely across abdomen	SUBORDER ADEPHAGA,
	Antennae arising from front of head, above mandibles	FAMILY CICINDELIDAE (p. 28)
1'	First visible abdominal sternum not divided by hind coxae, the posterior margin of sternum extending completely across abdomen	SUBORDER POLYPHAGA,
	Antennae not rising from front of head	2
2	Antennae lamellate	FAMILY SCARABAEIDAE, 3
2'	Antennae otherwise	9
3	Antennae 11-segmented	SUBFAMILY GEOTRUPINAE (p. 180)
3'	Antennae 8- to 10-segmented	4
4	Hind tibia with 1 apical spur, pygidium partly uncovered by elytra	SUBFAMILY SCARABAEINAE (p. 164)
4'	Hind tibia with 2 apical spurs, pygidium usually covered by elytra	5
5	Hind tarsal claws of unequal size, movable	SUBFAMILY RUTELINAE (p. 184)
5'	Hind tarsal claws of equal size, except some males of the Dynastinae	6
6	Tarsal claw usually toothed or bifid, generally fixed and equal; clypeus not emarginate at sides	SUBFAMILY MELOLONTHINAE (p. 182)
6'	Tarsal claw simple, clypeus variable, generally emarginate at sides	7
7	Pronotum emarginate and strong serrate at sides, with a broad median groove	SUBFAMILY EUCHIRINAE (p. 158)
7'	Pronotum not emarginate nor strongly serrated at sides, without a broad median groove	8



- 8 Front coxae transverse, body usually convex above, lateral margin of elytra without a shallow emargination behind humeri; mandibles partly visible externally
SUBFAMILY DYNASTINAE (p. 129)
- 8' Front coxae conical and more or less prominent, body usually flattened above, lateral margin of elytra usually with a shallow emargination behind humeri; mandibles not visible externally
SUBFAMILY CETONIINAE (p. 198)
- 9 Antennae serrate
FAMILY BUPRESTIDAE (p. 254) 10
- 9' Antennae otherwise 15
- 10 Body rather rounded, very convex above 11
- 10' Body not rounded nor very convex above 12
- 11 Large sized (30-45 mm)
SUBFAMILY JULODINAE (p. 260)
- 11' Very small sized (3-5 mm)
SUBFAMILY GALBELLINAE (p. 300)
- 12 Pronotum margined laterally 13
- 12' Pronotum not margined laterally 14
- 13 Eyes triangular or nearly so and very closed together, elytra strongly grooved longitudinally
SUBFAMILY BUPRESTINAE (p. 292)
- 13' Eyes widely separated, elytra smooth without grooves
SUBFAMILY AGRILINAE (p. 300)
- 14 Head without a median groove between eyes, finely moderately punctured above
SUBFAMILY POLYCESTINAE (p. 262)
- 14' Head with a median groove or deep furrow between eyes, except *Lampetis* strongly sculptured and sometimes bearing a short ridge at median
SUBFAMILY CHRYSOCHROINAE (p. 266)
- 15 Antennae with the terminal segments (usually 3 segments) expanded laterally into rounded or flattened lobes and not being united into a compact ball 16
- 15' Antennae not exactly fitting above description 17

- 16 Antennae geniculate, the first segment very long, the rests small and going off at an angle to the first, rather in a straight line FAMILY LUCANIDAE (p. 40)
- 16' Antennae not geniculate, rather curved clavate, the first segment not very long, the rests connected to each other not in a straight line, usually curved inwards FAMILY PASSALIDAE (p. 120)
- 17 Antennae slightly shorter than elytra, the last three segments serrated externally FAMILY TRICTENOTOMIDAE (p. 474)
- 17' Antennae shorter or longer than elytra, the last three segments not serrated externally 18
- 18 Antennae clavate or filiform, head abruptly narrow behind eyes to form a narrow neck FAMILY MELOIDAE (p. 301)
- 18' Antennae filiform, head not constricted behind eyes 19
- 19 Mandibles scalpriform (arched and scoop-like), maxillary palp sometimes very long and with segment 4 bilobed FAMILY DISTENIIDAE (p. 314)
- 19' Mandibles normal, maxillary palp not very long FAMILY CERAMBYCIDAE 20
- 20 Head usually oblique, mandibles pointed forwards 21
- 20' Head vertical in front, mandibles pointed downwards SUBFAMILY LAMIINAE (p. 400)
- 21 Prothorax with lateral margin or partial lateral margin, without toothed or usually with many teeth at sides SUBFAMILY PRIONINAE (p. 314)
- 21' Pronotum without lateral margin, without toothed or with a single tooth at sides SUBFAMILY CERAMBYCINAE (p. 336)

Total number of species illustrated



	<i>Total No. of species</i>
Family Cicindelidae	16
Family Lucanidae	73
Family Passalidae	6
Family Scarabaeidae (140)	
Subfamily Dynastinae	17
Subfamily Euchirinae	2
Subfamily Coprinae (Scarabaeinae)	20
Subfamily Geotrupinae	1
Subfamily Melolonthinae	2
Subfamily Rutelinae	16
Subfamily Cetoniidae	82
Family Buprestidae (68)	
Subfamily Julodinae	3
Subfamily Polycestinae	11
Subfamily Chrysochroinae	38
Subfamily Buprestinae	13
Subfamily Agrilinae	2
Subfamily Galbellinae	1
Family Meloidae	7
Family Disteniidae	1
Family Cerambycidae (195)	
Subfamily Prioninae	19
Subfamily Philinae	1
Subfamily Lepturinae	1
Subfamily Cerambycinae	80
Subfamily Lamiinae	94
Family Trictenotomidae	3
Total	509

The members of this family are bright colored beetles widespread locally and abundantly. They are commonly known as the tiger beetles. A tiger beetle has large and protruding eyes, very long and slender legs. Clypeus is much broader than the distance between the **antennal sockets**. Front tibia armed with two terminal spurs. Adults are active predaceous beetles on sandy open areas, on foliage and tree trunks. Larvae dwell in vetical tunnels under the ground, active as ambush predators. They furnish their backs with two or three pairs of abdominal hooks which serve them as anchors firmly holding in the tunnel.

The Tiger Beetles of Thailand written by Roger Naviaux & Bro. Amnuay Pinratana (2004) as the second revised and complete edition for Thailand fauna contains 132 recognized species and subspecies. However, only some genera of tiger beetles are frequently seen throughout the country. The commonest ***Cosmodela*** and ***Calochroa*** (the former name known as ***Cicindela***) inhabits in open area areas, such as river banks, sandy beaches, forest clearings and sandstone clearings. The other interesting group, ***Collyris***, ***Neocollyris*** and ***Tricondyla*** are usually bluish or purplish-blue to black colored species. They seem hunting for small preys, mainly small insects and ants on tree trunks. leafy foliage or sometimes on the ground. Larvae do not establish their holds into the ground like the true cicindelids, but into the small holds of the death branches of the trees.

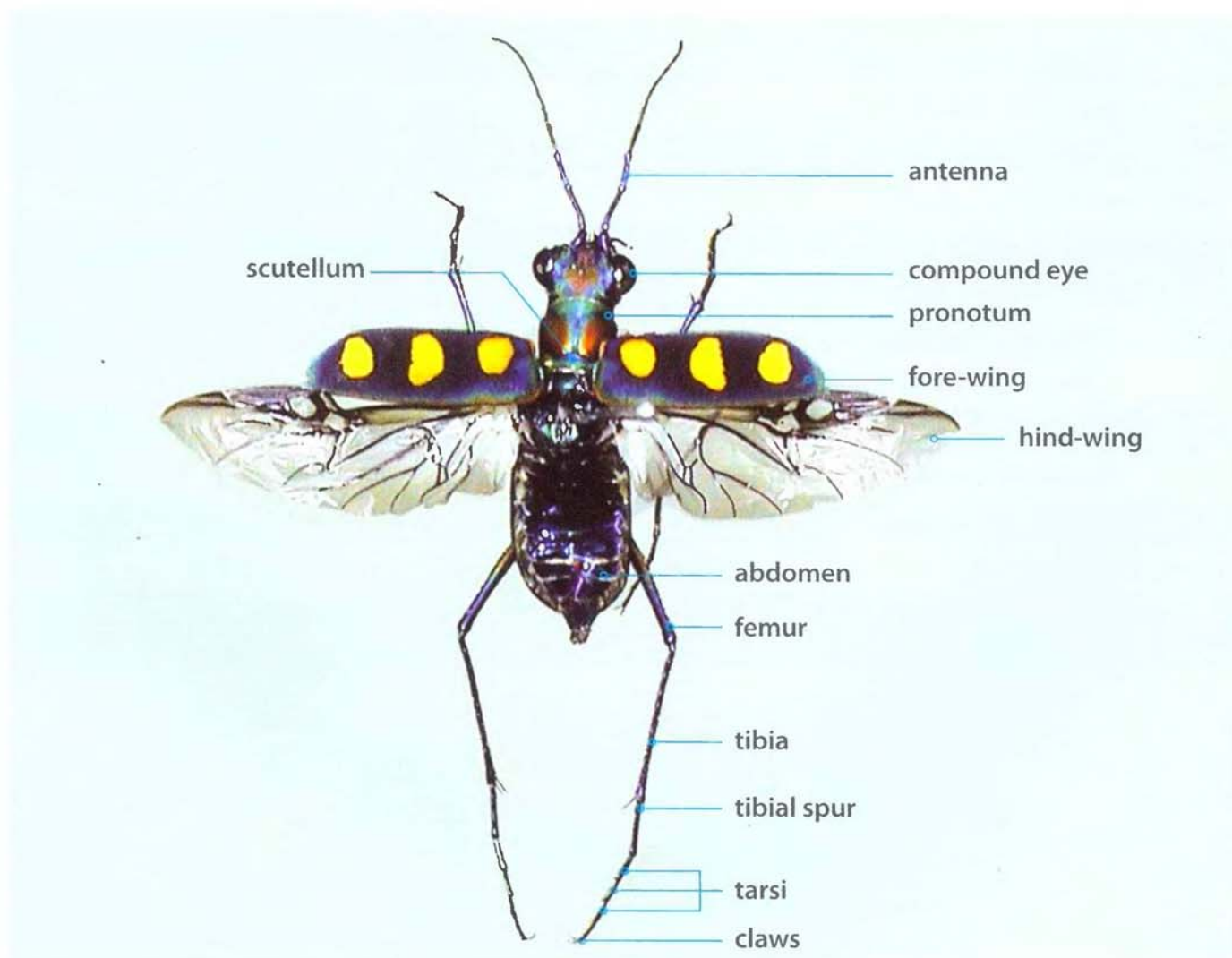


Figure 8. External characteristics of *Cosmodela aurulenta juxtata*.



1



2



Figure 9. Tiger beetles, 1. *Tricondyla annulicornis*. (Nakhon Nayok, 18.v.2008),
2. *Cosmodela aurulenta juxtata*. (Chanthaburi, 12.iv.2002)

Tricondyla Latreille, 1822

Medium to very large sized (varying from 12 to 28 mm), elongate in shape, apterous with elytra interlocked together, compressed at the base then widened posteriorly.

T1. **Tricondyla mellyi** Chaudoir, 1850

ด้วงเสือปีกกลมคี่น

Large and robust body, black, a little bit shining. Pronotum is rather long, grabrous and less gradually contracted in front. Elytra are regularly widened, strongly sculptured in the middle and strongly punctured at apices. Femora are red, tibiae and tarsi dark brown. I wrongly identified as **T. gestroid** in my previous edition. Because the formed by polygonal pits of both sepcies are regularly very similar, but slightly smaller in size in the latter (14-17 mm).

Length 18-23 mm.

Distribution: Assam, Myanmar, Laos, N. Vietnam, S. China, N. Thailand (Doi Pui).

T2. **Tricondyla annulicornis** Schmidt-Goebel, 1846

ด้วงเสือปีกกลมค้อม

A rather large black species, head is large, eyes very prominent. Pronotum is rounded, upper surface grabrous. Elytra are united at base or the whole length, sculpture dense in the first half, more or less distinctly transverse rugose. Femora are red, other parts black.

Length 19-23 mm.

Distribution: Sikkim, Assam, Bhutan, Laos, Vietnam, Malaysia, Thailand (Samoeng).

Neocollyris Horn, 1901

This is a very difficult genus for identification because of the elytral sculpture looked very similar to each other. Referring to Roger Naviaux & Bro. Amnuay Pinratana, 2004, this genus was divided into 12 subgenera. Among them, only five are present in Thailand (**Brachycollyris**, **Neocollyris**, **Orthocollyris**, **Leptocollyris** and **Pachycollyris**). I selected only one species of subgenus **Neocollyris** present in this book.

T3. **Neocollyris bonellii bonellii** (Guérin-Ménéville, 1844)

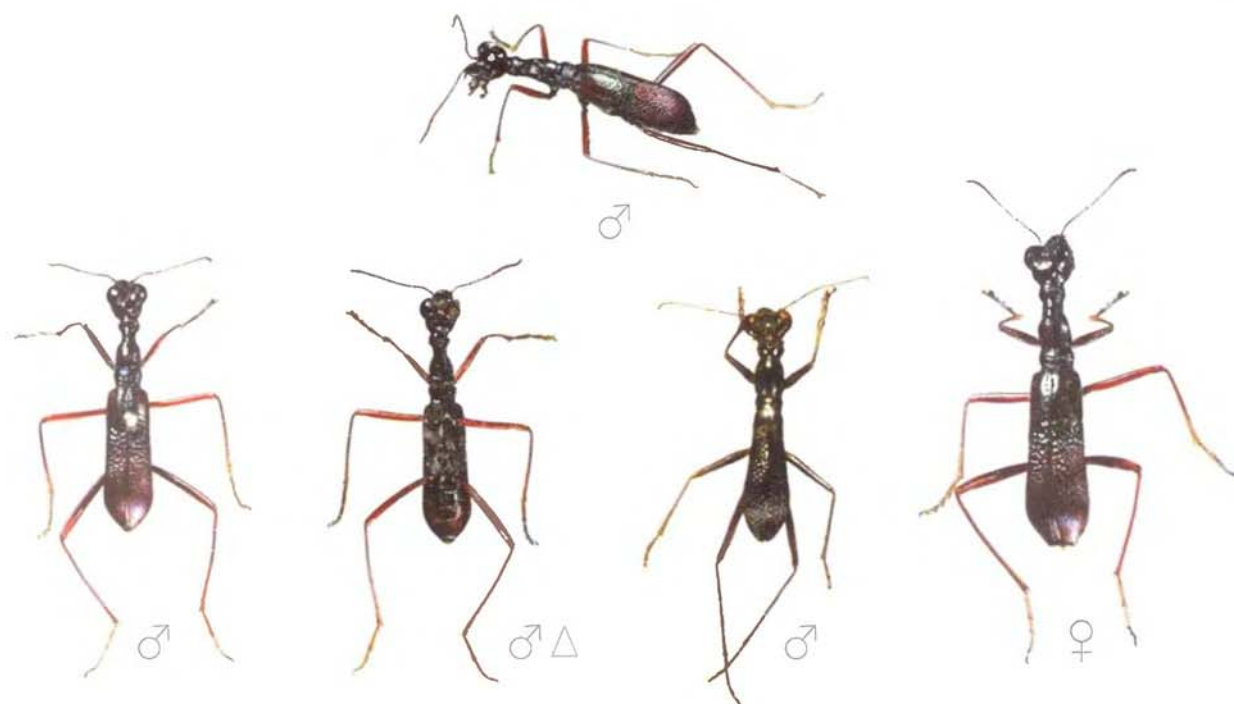
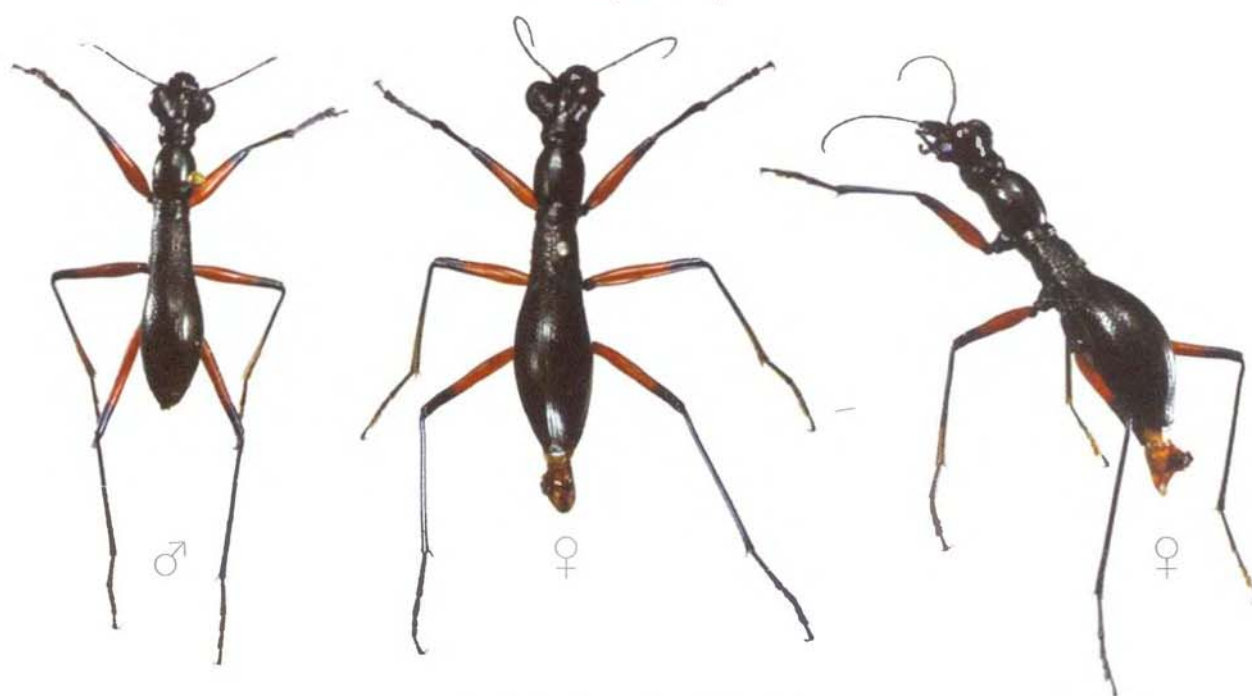
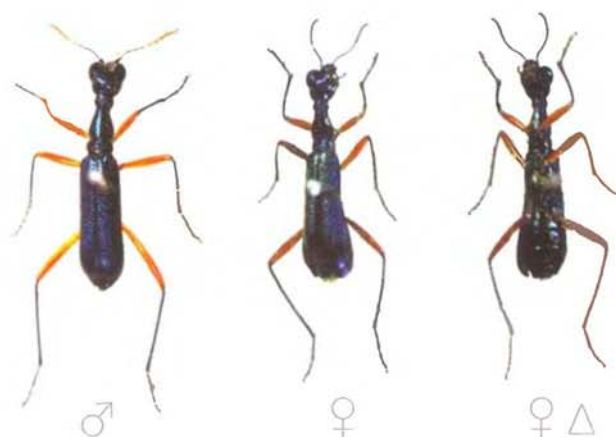
ด้วงเสือน้ำเงินแดงรอยกลาง

Large and elongate species, entire body is blue, purplish-blue to black, with red legs (femora). Head is large, vertex prominent, not strongly narrowed behind the eyes. Elytra are homogeneous sculptured both in depth and density in the middle and much finer towards the bases and apices. This species is more common among all **Collyris**.

Length 10-13 mm.

Distribution: India, Myanmar, China, Sumatra, Java, Thailand (Trat, Saraburi).

(1.4 X)

T1. *Tricondyla mellyi*T2. *Tricondyla annulicornis*T3. *Neocollyris zerchei*

Collyris (Fabricius, 1801)

Large to very large sized, differ notably from **Neocollyris** primary on shape of the head which is broad, but very short, with the convex poorly projecting behind the eyes when seen from side view.

T4. **Collyris mnischei** Chaudoir, 1864

ด้วงเสือน้ำเงินเหลือบม่วง

Entirely dark brown, with violet reflection, Elytra are fairly purple sometimes bright. Head is broad and short, with the vertex very short behind the eyes from side view. Elytral sculpture is very coarse in the middle, formed by deep transverse wrinkles. Trichanters are reddish in male, darker in the female, femora reddish. According to R. Naviaux & Pinratana (2004) there are two species occurs in Thailand. The other species, **C. gigas** Lesne, is larger and also very rare in collection, occurs in N. Thailand (Chiang Mai) and Laos.

Length 20-24 mm.

Distribution: It is a rare species, confined to N. Thailand (Wiang Pa Pao, Doi Pui)

Cylindera Westwood, 1831

Actually this is a very import genus total more than 2000 species in the world. Small to medium sized, brown, greenish bronze with white markings or none, a difficult group in identification and fewer specimens in collection.

T5. **Cylindera minuta** (Olivier, 1791)

ด้วงเสียวเล็กลายเลือน

Small species, color brown or slightly greenish bronze, but dull, poorly luminous. Pronotum slightly wider than long, rounded at sides. Elytra are subparallel-sided, slightly abruptly narrowed towards the apex. The elytral pattern is complete as illustrated, rather slender, sometimes break off, dull yellow or greenish barely visible.

Length 6-10 mm.

Distribution: S. India, Myanmar, Indonesia, Philippines, Thailand (Kanchanaburi).

Calochroa Hope, 1838

Large to very large insects, head is stout with fairly projecting eyes, antennae long and thin. Elytral pattern generally are well developed and formed by three rounded spots or patches on each elytron, the humeral one sometimes extended towards the scutellum, or sometimes arranged into a longitudinal line, or totally absent.

T6. **Calochroa anometallescens** (Horn, 1893)

ด้วงเสียวเหลืองจุดไหล่สีเขียว

Head and pronotum are variable in color, sometimes dull brown with metallic green reflection, slightly smaller and more elongate than **C. cariana**. Elytra are convex, parallel-sided, velvety black, with lytral pattern golden yellow to orange yellow, but variable in extension, mainly the humeral stripe usually broad, lunule shaped, but may be reduced to more or less developed mark, the median spot large and usually pointed inwards, the apical spot rounded.

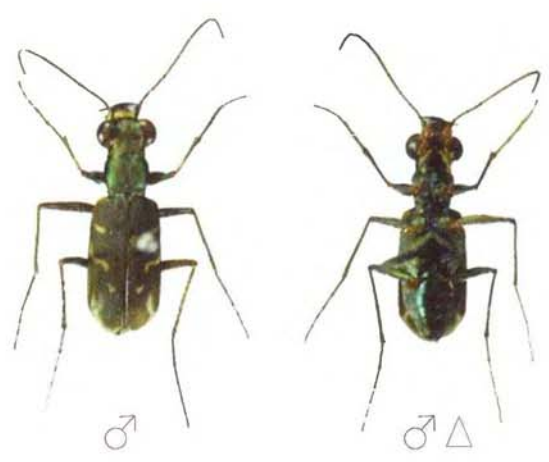
Length 14-18 mm.

Distribution: Confined to N. Thailand (Wiang Pa Pao)

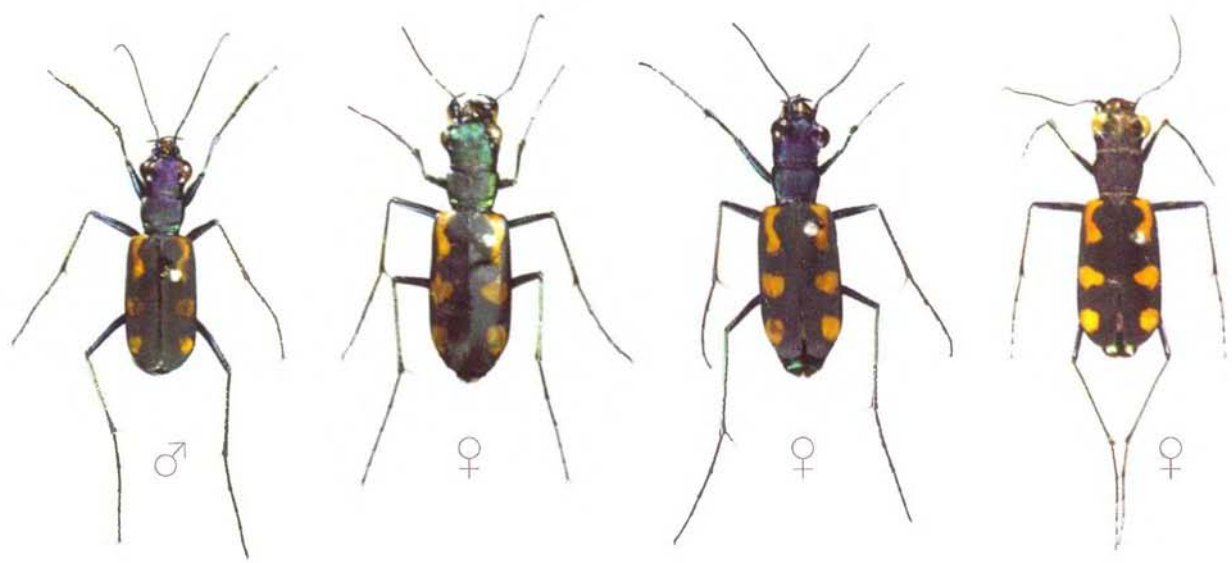
(1.4 X)



T4. *Collyris mniszechei*



T5. *Cyllindera minuta*



T6. *Calochroa anometallescens*

T7. *Calochroa cariana* (Gestro, 1893)

ด้วงเสือเหลืองหัวทองแดง

Head and pronotum are brilliant coppery above, metallic green at sides. Elytra are subparallel-sided, black, rough, with a yellow patch at shoulder, confluent with a waved longitudinal stripe, occupying one third of the length of each elytron, behind this, bearing two large oval shaped, yellow spots, one at the middle and one before the apex.

Length 18-23 mm.

Distribution: India, Myanmar and Thailand (Mae Rim).

T8. *Calochroa mouhoti* (Chaudoir, 1865)

ด้วงเสือเหลืองลายปากนก

Head and pronotum are generally metallic green or blue. Elytra are dark blue, elytral spot-pattern is light yellow. Subspecies *elgantula* elytra have the longer the humeral lunule than the nominate form (*mouhoti*), reaching the third of elytral length and slightly enlarged at the end.

Length 15-20 mm.

T8a. *Calochroa mouhoti mouhoti* (Chaudoir, 1865)

Distribution: Myanmar, Thailand (Loei, Nakhon Nayok)

T8b. *Calochroa mouhoti elgantula* (Dokhtouroff, 1882)

Distribution: Myanmar, N. Thailand (Mae Taeng).

T9. *Calochroa shozoi* Naviaux & Swada, 1898

ด้วงเสือเหลืองจุดไหล่เชื่อม

Similar to the two preceding species, but head and pronotum are blackish blue or green, elytra black mat, elytral pattern ornage yellow colored. Pronotum is slightly wider than long.

Elytra are subparallel-sided, the humeral stripe is more sinuous and also fused with rounded median spot, another apical spot rounded and slightly smaller than the median one.

Length 17-20 mm.

Distribution: Confined to N. Thailand (Samoeng, Sansai, Wiang Pa Pao).

T10. *Calochroa laurae* (Gestro, 1893)

ด้วงเสือเหลืองแถบไหล่สั้น

Referring to Naviaux & Pinratana (2004) this species is very close to the next species, *C. tritoma*, in both its size and appearance. Elytra are slightly oval-shaped, more progressive narrower and not flat on disc. Elytral spot-pattern is generally broader, the humeral lunule shorter, but covering the shoulders, the medial fascia large and triangular, the preapical lunule large and reaching nearly the margin.

Length 12-16.

Distribution: Myanmar, Thailand (Kreng Krawia - Kanchanaburi).

T11. *Calochroa tritoma* (Schmidt-Goebel)

ด้วงเสือเหลืองแถบไหล่ยาว

Fore-part is narrow, dark green with cupresous reflection, Elytra are parallel-sided, rather broad, slightly flat at disc. Elytral spot-pattern is similar to that of *C. mouhoti*, but less broad, with humeral lunule rather straight, longer, thinner and not entirely overlaying the shoulders, the two other marks rounded and small.

Length 12-16.

Distribution: According to Naviaux & Pinratana (2004). This species is not common in Myanmar, Thailand (Kreng Krawia - Kanchanaburi).



T7. *Calochroa cariana*



(Mae Taeng)

T8. *Calochroa mouhoti*



(Nakhon Nayok)

(1.4 X)



T9. *Calochroa shozoi*



(after Naviaux & Pinratana)
T10. *Calochroa laurae*



(after Naviaux & Pinratana)
T11. *Calochroa tritoma*

T12. ***Calochroa flavomaculata*** (Hope, 1831)

ด้วงเสื้อจุดขาวเล็ก

A moderate-sized, entirely dark velvety blue species. Pronotum and elytra are somewhat rounded at sides, with three small longitudinal white or yellowish spots on each elytron, the first and the third at about equal distances from base and apex.

Length 12-15 mm.

Distribution: India, Myanmar, Cambodia, China, Pilippines and Thailand (Ubon Rachathani, Sansai).

Cosmodela Rivalier, 1961

Large size, with legs and antennae long and thin, sculptures of head and pronotum are very fine, giving a polish appearance notably different from the ***Calochroa***.

T13. ***Cosmodela aurulenta*** (Fabricius)

Cosmodela aurulenta juxtata (Acciavatti & Pearson, 1989)

(=*Cicindela aurulenta juxtata*)

ด้วงเสื้อสามจุดเหลืองธรรมดา

A very common, moderately large and variable species. Elytra are oval shaped, richly colored, blackish-green and bright red at suture, with a small yellow spot at the shoulder and three others on each elytron, the front and hind ones being more or less rounded, but varying in size, the central one usually large transverse and rounded.

Length 13-18 mm.

Distribution: India, Myanmar, S. China, Hong Kong, Malaysia, Indonesia, Cambodia, Laos, Thailand (Kanchanaburi, Chanthaburi, Trat).

(1.4 X)



♀



♀



♀ ♂

T12. *Calochroa flavomaculata*



♂



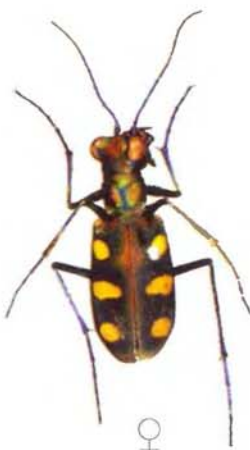
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T13. *Cosmodela aurulenta juxtata*

T14. *Cosmodela virgula* (Fleutiaux, 1893)

ด้วงเสือเหลืองจุดกลางเสี้ยว

Close similar to the preceding species, but slightly more elongate. Pronotum is longer. Elytra are oval shaped, less wide at the shoulders, wider red at the base and suture of each elytron, the elytral spots are smaller and the central spot being thin, transverse and comma-shaped.

Length 14-20 mm.

Distribution: Nepal, India, Bhutan, Myanmar, China, Hong Kong, Thailand (Doi Pha Hom Pok, Wiang Pa Pao).

T15. *Cosmodela duponti* (Dejean, 1826)

ด้วงเสือสีผสมจุดกลางขีด

Variable colored form from green to blue and violet, but clearly metallic red at suture. Elytra are oval shaped and broad at the shoulders. Elytral pattern is formed by a small yellow or whitish dot below the humeral angle, a transverse median fascia and a shorter apical fascia. Subspecies *duponti* with the median fascia reduced into a narrow transverse band whereas that of the *barmanica* is broader, the the inner edge is slightly broader than the outer edge.

Length 15-18 mm.

T15a. *Cosmodela duponti duponti* (Dejean, 1826)

Distribution: Cambodia, S. Vietnam, E. and N.E. Thailand (Chanthaburi, Ubon Ratchathani)

T15b. *Cosmodela duponti barmanica* (Gestro, 1893)

Distribution: Myanmar, N. Thailand (Mae Hong Son, Fang, Waing Pa Pao).

Lophyra Motschoulsky, 1859

Rather small sized, the elytral pattern is generally well developed and comprises, in addition, a basal spot plus one or two elongate sutural marks.

T16. *Lophyra striolata striolata* (Illiger, 1800)

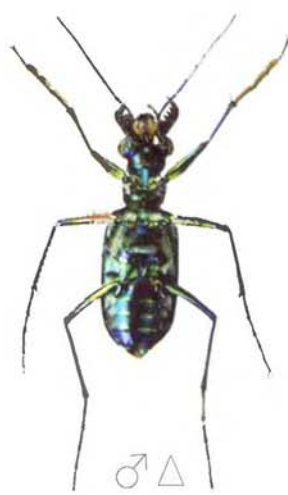
ด้วงเสือเล็กลายพลุเหลือง

Head and pronotum are green with coppery reflection above. Elytra are velvety black, long, almost parallel-sided, with a variable yellowish markings: a long longitudinal stripe extending from the shoulder almost mid-way to apex, broken into three spots towards apex; three more small spots at middle of the base and near the suture on each elytron. Legs are dark brown, with metallic green to cyaneous reflection.

Length 11-13 mm.

Distribution: India, Myanmar, Cambodia, Thailand (Nam Nao).

(1.4 X)

T14. *Cosmodela virgula*15a. *Cosmodela duponti duponti*15b. *Cosmodela duponti barmanica*T16. *Lophyra striolata striolata*

FAMILY LUCANIDAE

Lucanidae is one of the most interesting group of beetles in the world. They are commonly known as stag beetles. Because the males of many species have large and long protruding mandibles in front with some resemblance to a stag's antlers, while those of the female are short, thick, dark in colored and of normal size. Following to Bro. Amnuay Pinratana & Jean-Michel Maes, 2003, there are 24 genera, 102 species or 115 species and subspecies all together. Some of them are not possible to obtain the specimens nor photos which I skipped for the illustration in this book. I have illustrated 73 species mainly from availability of specimens in my own collection.

Life history of Thai Lucanidae have been studied crazily in Thailand during the past 10-20 years. I came across some species from the northern Thailand and keep breeding them at Siam Insect-Zoo at Mae Rim, Chiang Mai in order to learn more about the biology of the young stages. The more we do the more we learn. Some larvae of such as large male forms of *Odontolabis siva* last longer than 2-3 years.

The larvae are typically scarabaeiform or C-shaped, with a pair of strong black jaws or mandibles, hardened yellow-brown to reddish-brown head and thick white to creamy thorax and abdomen. The larvae do not infest living or freshy dead trees. All of them found in decaying timber in the forest. A few genera of soft-wood trees inhabited by this family are known, notably *Quercus*, *Castanopsis* (น้ํา) and *Schima wallichii* (ทะเล). The beetles fly at night and most common species are attracted by light. Some *Lucanus* spp. do not come to the light. They are often to be seen feeding sap on wound parts of tree-trunks.

A common species could be an attractive species for amateur collectors because of the peculiar shaped or beauty rather than its rarity, such as *Prosopocoilus giraffa* which occurs many places in Thailand and many countries in Southeast Asia. There are about 9 subspecies of this species occur in India, Nepal, Bhutan, Myanmar, Laos, Vietnam, Cambodia, Malaysia, Indonesia, Philippines and Thailand. A large male bears a pair of protruding long peculiar-shaped mandibles. It is considered as the longest living stag beetle in the world. *P. giraffa daisukei* Mizunuma & Nagai, 1991 from Negros and Sibuyan Is., Philippines





being the maximum length of 114 mm. It is one of the protected beetles in Thailand by the reason of not to be hunted for the worldwide trading. However, it is one of successful species easily to breed and rear in captive breeding. A female after mating lays her eggs and usually hatch in a high number. The egg incubation is about 1 month. The larval stage lasts for 9 months in male and 4-9 months in female. Then pupate usually for 1 more month. The adults with good foods will last for 3-6 months. All stages of insects do not disturb each other in the contrary to *Serrognathus titanus* or *S. platymelus* which are considered as aggressive species. Several attempts have been made in breeding and rearing at Siam Insect-Zoo in Chiang Mai in the mating season usually in the rainy season in 2007. We will do more in the coming years. Many species of stag beetles can apply with similar techniques of breeding which are quite successful except some difficult species, such as *Dynodorcus antaeus*. It is one of them that many entomologists have tried to breed, but hardly to be successful. They prefer hiding at dark cool places than in the normal room with some daylight. Their habits of mating and egg laying are also not very well controlled. Most of the females of this species lay their eggs outside the decaying woods which unlikely happen in other species. Therefore many of hatched larvae die before finding the food.

Breeding *Odontolabis siva* is a good learning activity. The large larvae could disturbed each other in the same breeding pot or jar because of the very large sized body which each requires a bigger chamber for living separately. Some species have been successfully bred and reared in 2007-2008 at Siam Insect-Zoo, such as *Hexarthrius vitalisi*, *Dynodorcus curvidens*, *Rhaetulus speciosus*, *Neolucanus* spp., *Prosopocoilus mouhotii elegans*, *P. giraffa*, *Serrognathus platymelus* and *Aegus* spp. Further studies of the larval stages of stag beetles are needed. Rearing stag beetles can be a good hobby for a relaxing time as it is so in some countries in the Far East like Japan, Taiwan, China and Hong Kong.



Figure 10. *Neolucanus saundersi maximus* are in copulating (Wiang Pa Pao, Chiang Rai, October 2005)



Figure 11. *Prosopocoilus giraffa*; 1. fullgrown larva, 2. adult male of large-mandible form.



Figure 12. *Serrognathus platymelus platymelus*; 1. newly pupating pupa, 2. adult male.



Figure 13. *Dynodorcus curvidens*; 1. medium stage larva, 2. adult male.

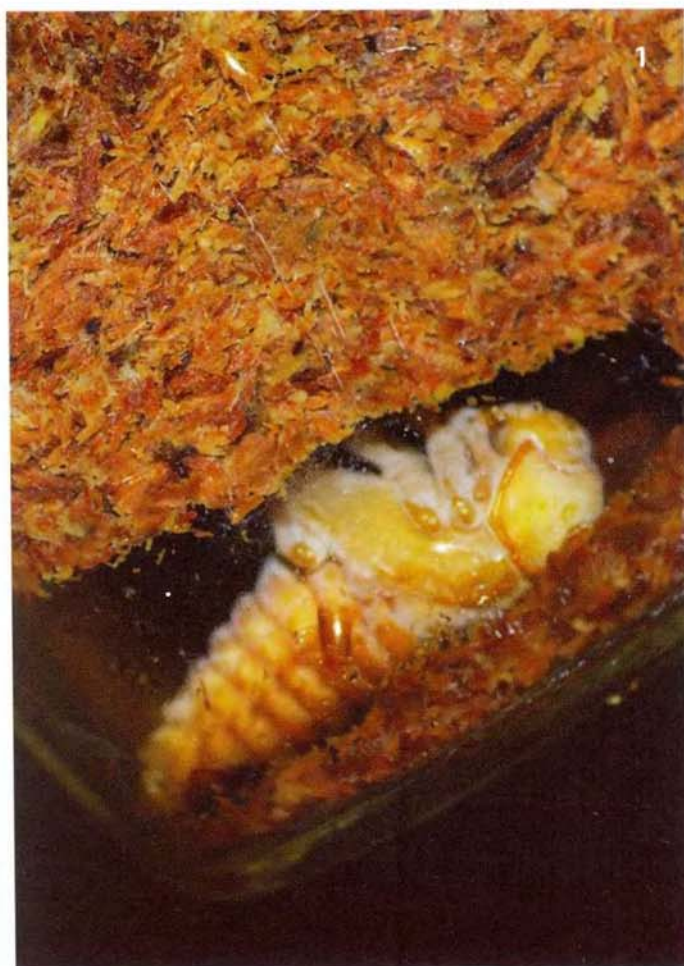


Figure 14. *Rhaetulus speciosus*; 1. pupa, 2. young adult male.



Figure 15. *Odontolabis siva siva*; 1. The adults are in copulating, 2. A large larva which lasts for 1-2 years, 3. adult male.



Figure 16. *Neolucanus parryi*, the aggressive male raises its mandibles up for biting.



Figure 17. *Prosopocoilus inquinatus biplagiatus*; 1. the side-view of pupa, 2. newly emerged adult.

Lucanus Scopoli, 1763

Antennal club is usually composed of four, but sometimes of more, i.e. 5-6 joints, middle tibiae always and hind tibiae each usually bearing two or more lateral spines.

L1. **Lucanus fairmairei** Planet, 1897

ด้วงคีมก้ามปูสี่สนิม

Light brown, antennal club is composed of four joints. **Male**, mandibles are medium to large, with a fork on the extremity. **Female**, the same color, has short mandibles, front tibiae large with four external spines.

Length male 33-52 mm, female 27 mm.

Distribution: Myanmar, S. China, N. Thailand (Nan).

L2. **Lucanus fryi** Boileau, 1911

ด้วงคีมก้ามปูไม้ง่าม

Antennal club is composed of four joints. **Male**, clypeal process is forked in front; elytra dark reddish brown and not hairy. **Female**, generally dark brown, hind angles of the pronotum are obtuse.

Length male 39-70 mm, female 33-37 mm.

Distribution: Myanmar, S. China (Yunnan), N. Thailand (Doi Pha Hom Pok, Wiang Pa Pao).

L3. **Lucanus koyamai** Akiyama & Hirasawa, 1990

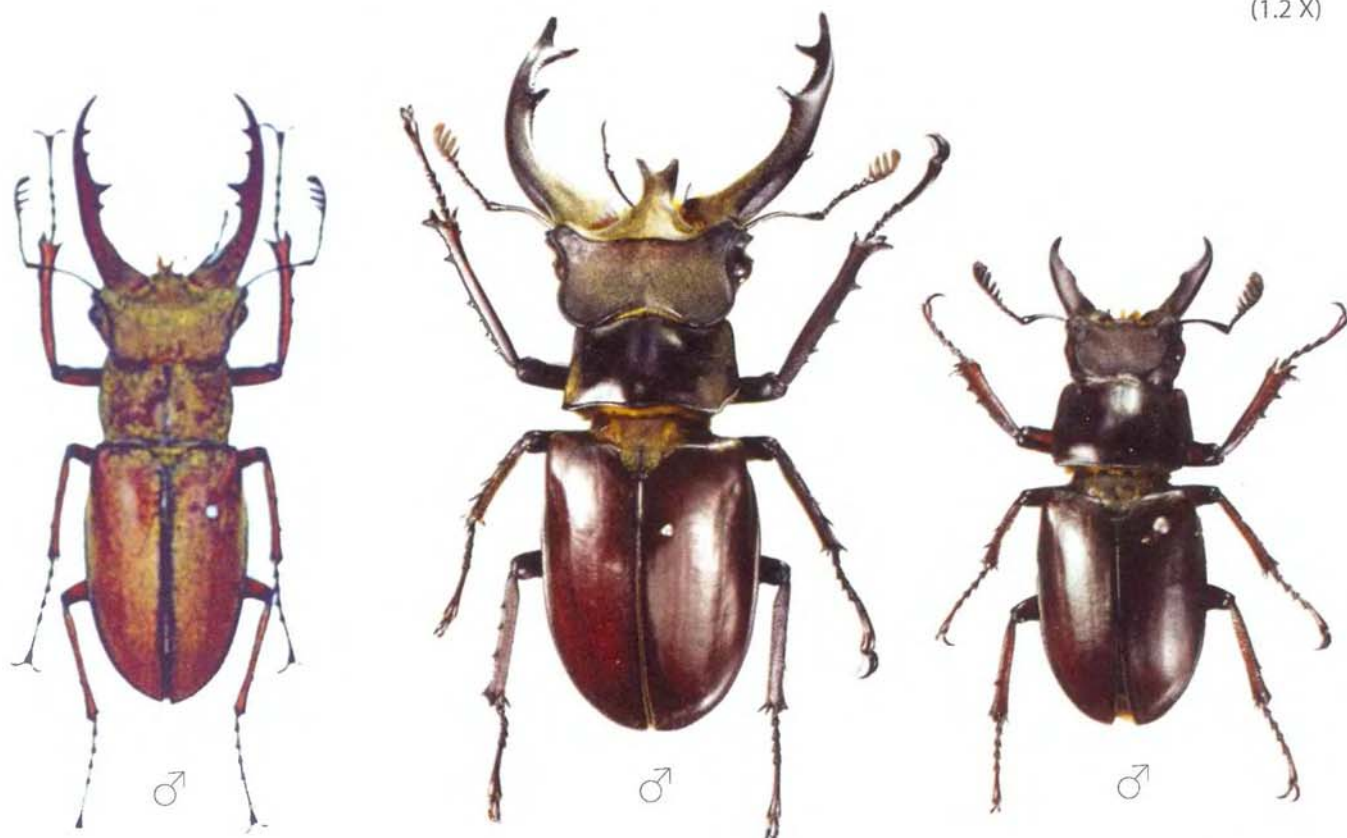
ด้วงคีมก้ามปูเล็ก

Antennal club is composed of five or six, the sixth rather short. **Male** is small and slender, dark brown to dark reddish brown, similar to small males of *L. sericeus*, but the antennal club of the latter composed of four joints. **Female** is darker or black.

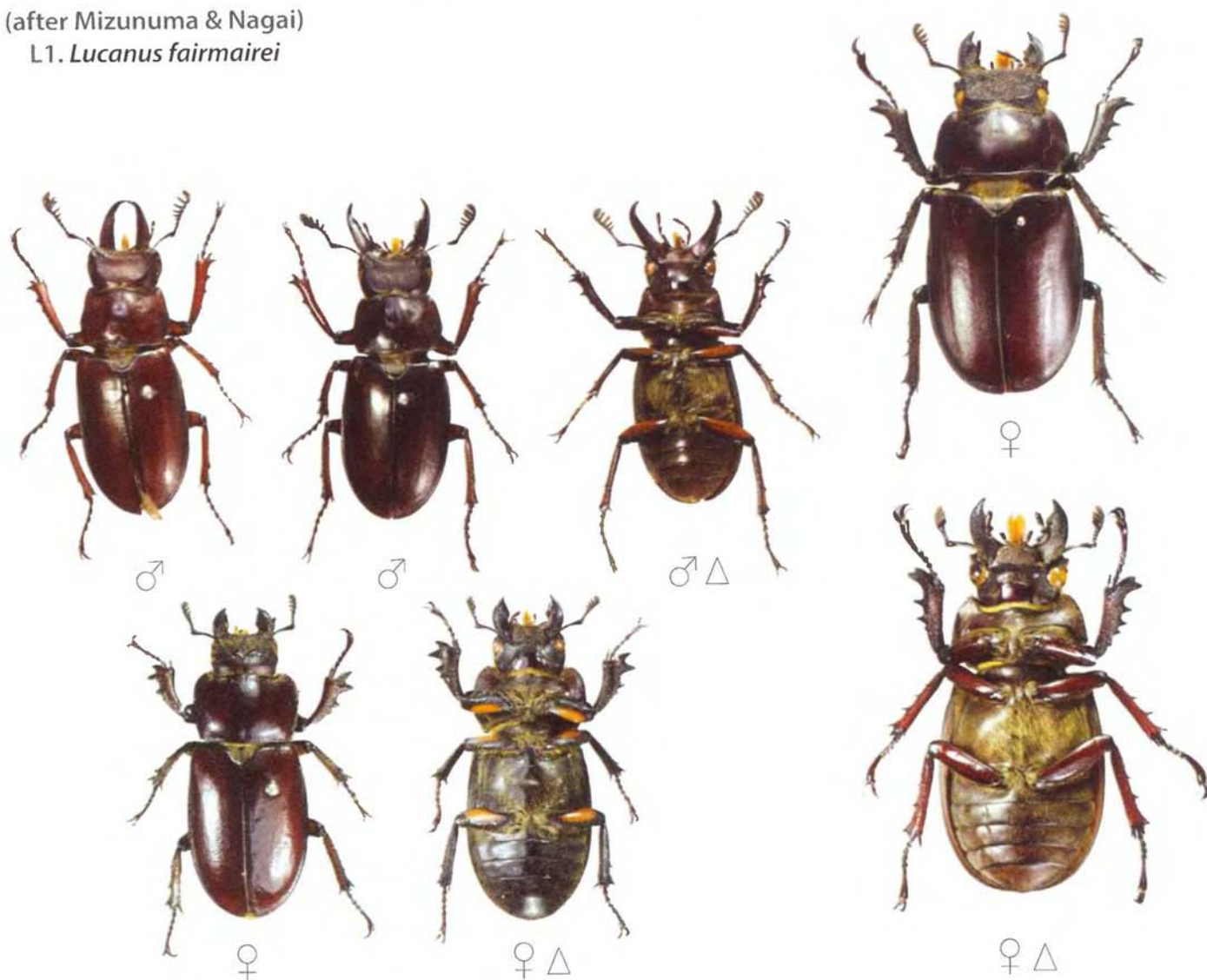
Length male 26-33 mm, female 27 mm.

Distribution: Confined to N. Thailand (Doi Pha Hom Pok).

(1.2 X)



(after Mizunuma & Nagai)
L1. *Lucanus fairmairei*



L3. *Lucanus koyamai*

L2. *Lucanus fryi*

- L4. *Lucanus laminifer* Waterhouse, 1890
Lucanus laminifer coronatus Zilooli, 1999

ด้วงคีมก้ามปูโค้ง

Antennal club composed of four joints. **Male**, head bears a median and two lateral processes rising abruptly, clypeal process sharply pointed. **Female**, generally dark brown or black, hind angles of pronotum are rounded.

Length male 42-80 mm, female 38 mm.

Distribution: India, Myanmar, China, Thailand (Wiang Pa Pao, Doi Inthanon, Doi Pha Hom Pok).

- L5. *Lucanus miyashitai* Mizunuma, 1994

ด้วงคีมก้ามปูน่าน

It is small light brown species, very similar to *L. koyamai*, but the antennal club rather long and composed of seven joints.

Length male 18-23 mm, female unknown.

Distribution: Endemic species of Thailand (Nan).

- L6. *Lucanus sericeus* Didier, 1925

ด้วงคีมก้ามปูขน

Antennal club is composed of four joints. **Male**, clypeal process is sharply pointed; elytra hairy, generally black clothed with fine hairs. **Female** is black, hind angles of pronotum obtuse.

Length male 37-70 mm, female 30 mm.

Distribution: Vietnam, N. Thailand (Wiang Pa Pao, Doi Pha Hom Pok).

(1.2 X)



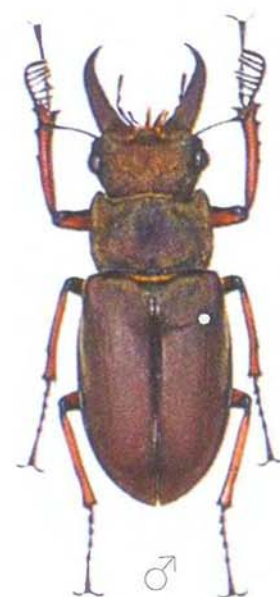
♂



♂



♀

L4. *Lucanus laminifer coronatus*

♂

(after Mizunuma & Nagai)
L5. *Lucanus miyashitai*

♂



♂



♂



♀

L6. *Lucanus sericeus*

Hexarthrius Hope, 1842

Antennal club composed of five or six joints, mandibles are well-developed in male, but rather short in female; middle and hind tibiae each with a strong lateral spine in female.

L7. ***Hexarthrius nigrinus*** Lacroix, 1990

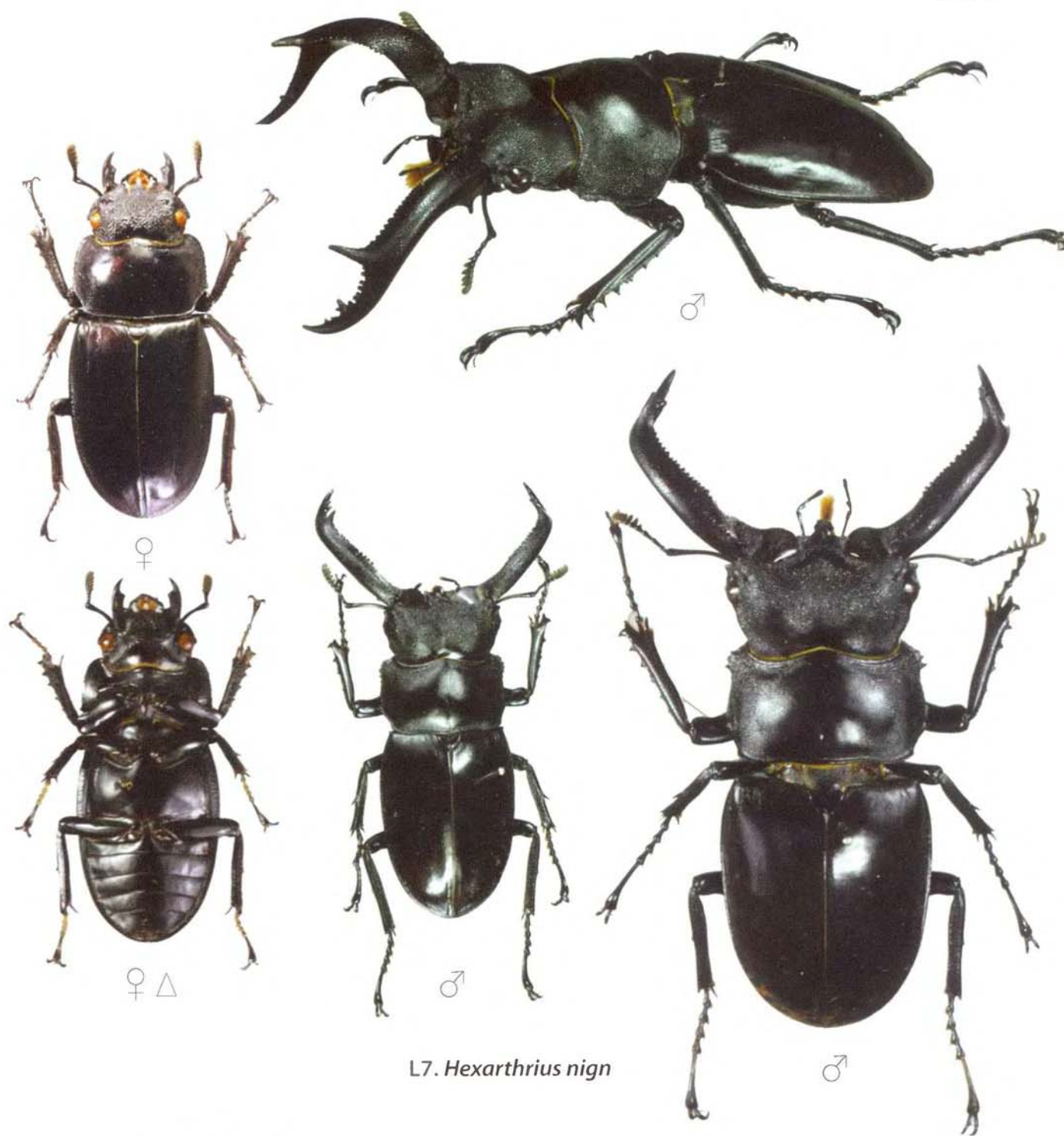
ด้วงคีมละมั่งดำเขาใหญ่

Entirely black. **Male**, mandibles are curved downwards and inwards in front, with a sharply-pointed tooth produced upwards in the large male, but absent in the small male, without a basal tooth. **Female**, pronotum is irregularly serrated at sides from the front angles beyond the middle where bearing a sharp tooth there.

Length male 43-75 mm, female 37-41 mm.

Distribution: Endemic of Thailand (Khao Yai, Nakhon Nayok, Saraburi, Mae Sot).

(1.2 X)

L7. *Hexarthrius nign*L8. *Hexarthrius parryi deyrollei*

- L8. *Hexarthrius parryi* Boileau, 1899
Hexarthrius parryi deyrollei Parry, 1864

ด้วงคีมละมั่งเหลือง

Male, head and pronotum are black, elytra black with a large yellow patch near the apex except the black suture, occupying two-third of each elytron; mandibles curved downwards and inwards in front, with a sharply-pointed tooth produced obliquely upwards and inwards in large male, but reduced into a small tooth in the small male. **Female** is black, very similar to that of *H. nigrinus*, but the shoulders rather rounded instead of pointed.

Length male 43-80 mm., female 38-39 mm.

Distribution: India, Myanmar, Malaysia, Thailand (Wiang Pa Pao, Fang).

- L9. *Hexarthrius vitalisi* Didier, 1925

ด้วงคีมละมั่งเขาราบ

Male, dark reddish black to black; mandibles are slightly curved downwards, bearing a basal tooth and a middle tooth, both pointed inwards, the middle tooth absent in the small male.

Length 45-82 mm.

Distribution: N. Vietnam, Thailand (Doi Pha Hom Pok, Wiang Pa Pao, Muang Pan - Lampang).

(1.2 X)



♂



♂



♀

L8. *Hexarthrius parryi deyrollei*

♀



♀



♀ △



♂



♂



♂

L9. *Hexarthrius vitalisi*

Calcodes Westwood, 1834

Different from **Odnotolabis** by without jagal spines, small species.

L10. **Calcodes aeratus** (Hope, 1835)

ด้วงคีมสีทองแดง

A single species has been recorded from peninsular Thailand. Head is small, mandibles short, with a few teeth internally, with prominent body colored of coppery green or coppery red.

Length male 10-34 mm, female 15-19 mm.

Distribution: Myanmar, Malaysia, Sumatra, Java, Kalimantan, S. Thailand (Surat Thani).

Odontolabis Hope, 1842

Head with a post ocular spine in male, but absent in female; eyes completely divided by canthus into the upper and the lower parts; middle and hind tibiae without lateral spine; pronotum normally angulated at lateral margins and hind angles in the male.

Mandiblaaes in male are usually strongly developed into three different forms, **teleodont** or giant form, **amphiodont** or medium form and **priodont** or small form.

L11. **Odontolabis cuvera** Hope, 1843

ด้วงคีมกวางขอบเหลือง

Male is black with a broad yellow or reddish yellow patch at lateral margin of each elytron, remaining a black quadrate patch above elytra. **Female** is similar color to the male, head short, without a post-ocular spine. The yellow or reddish-yellow patch broader and darker in **fallaciosa** than in **sinensis**.

Length male 50-73 mm, female 43 mm.

L11a. **Odontolabis cuvera sinensis** (Westwood, 1848)

ด้วงคีมกวางขอบเหลือง

Distribution: China, Laos, Myanmar, Thailand (Wiang Pa Pao, Doi Saket, San Kamphaeng).

L11b. **Odontolabis cuvera fallaciosa** Boileau, 1901

ด้วงคีมกวางขอบเหลืองใหญ่

Distribution: China, N. Vietnam, Laos, Thailand (Nakhon Ratchasima).

(1.2 X)



(Cameron Highland)
L10. *Calcodes aeratus*



L11a. *Odontolabis cuvera sinensis*

L12. *Odontolabis dalmani dalmani* (Hope & Westwood, 1845)

ด้วงคีมกวางตาลใต้

Dark reddish brown to black. **Male**, pronotum bears three sharp lateral teeth, scutellum and elytra rather smooth and shining. **Female** is the same colored. Pronotum bears two sharp teeth at lateral and hind angles.

Length male 63-71 mm, female 45-48 mm.

Distribution: Myanmar, Malaysia, Kalimantan, Sumatra, Java, S. Thailand (Ranong, Nakhon Si Thammarat, Yala).

(1.2 X)



f. *teleodont*
(Tam Dao, N. Vietnam)



f. *priodont*



f. *amphiodont*
(Tam Dao, N. Vietnam)



(Java, leg. Kawano)

L11b. *Odontolabis cuvera flacciosa*



(W. Malaysia)



(Nakhon si Thammarat in coll. Kasetsart Uni.)



L12. *Odontolabis dalmani dalmani*

L13. *Odontolabis femoralis femoralis* (Waterhouse, 1887)

ด้วงคีมกว้างแต่้ม ด้วงคีมกว้างมลายู

It is rather large, black and yellow species. Head and pronotum are black and tinted with reddish. Elytra are brownish-yellow with a narrow black suture. Legs are brownish-yellow.

Length male 55-84 mm, female 45 mm.

Distribution: Malaysia, Sumatra, S. Thailand (Chumphon).

L14. *Odontolabis gazella gazella* (Fabricius, 1787)

ด้วงคีมกว้างสองสี

Male, head is black, with a short post-ocular spine, canthus rather broad, semi-circular shaped; pronotum black; elytra yellow with a narrow black stripe above the suture; front tibiae strongly curved downwards.

Female, elytra are yellow, with a broad black patch of V-shaped above the middle, extending from the shoulders to the suture at near the apices.

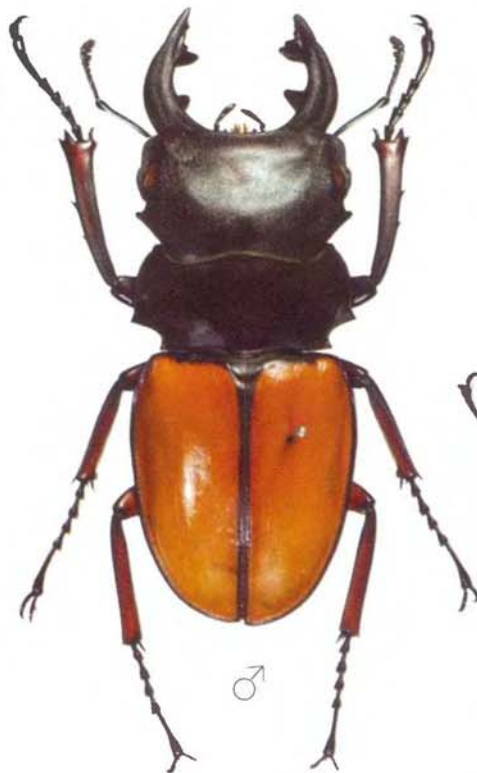
Length male 60-70 mm, female 39 mm.

Distribution: Malaysia, Kalimantan, Sumatra, S. Thailand (Chumphon, Ranong).



♂

f. teleodont
(Cameron Highland)



♂

f. amphiodont
(Java, leg. Kawano)



♀



♂

f. priodont
(Cameron Highland)

L13. *Odontolabis femoralis femoralis*



♂

(Cameron Highland)



♂

(Cameron Highland)



♀

(Chumphon in coll. Kasetsart Uni.)

L14. *Odontolabis gazelle gazelle*

- L15. *Odontolabis latipennis* (Hope & Westwood, 1845)

ด้วงคีมกว้างเขี้ยวใหญ่

Male, dark reddish brown; mandibles are short and broad from their base to almost the middle and strongly curved inwards at the outer edge, with serrate teeth at the inner edge; head with a post ocular spine pointed obliquely forwards; canthus rather broad in front of the eye, semi-circular shaped; pronotum broadest at lateral angle and abruptly narrowed at base.

Length 56 mm.

Distribution: Malaysia, Sumatra, Kalimantan, Philippines, S. Thailand (Nakhon Si Thammarat).

- L16. *Odontolabis macrocephalus* Lacroix, 1984

ด้วงคีมกว้างดำขุนลาว

Entirely black, slight shining. **Male**, head bears a large post-ocular spine, rather rounded ; mandibles long, each mandible with two to three basal teeth at the inner edge and strongly concave of semi-circular shaped in the middle, the front part rather straight with four or five serrate teeth beyond the tip; pronotum with two sharp lateral and hind angles. **Female**, head is short, canthus rounded at sides, without a post-ocular spine,

Length male 40-45 mm, female 30 mm.

Distribution: China, N. Thailand (Wiang Pa Pao).



(1.1 X)



(Nakhon Si Thammarat)

L15. *Odontolabis latipennis*

(Wiang Pa Pao)

L16. *Odontolabis macracephalus*

L17. *Odontolabis mouhotii* Parry, 1864

ด้วงคีมกว้างเหลือ้ง

Male, head bears a sharply pointed post-ocular spine; pronotum black; elytra yellow with a narrow black stripe along the sides of scutellum of each elytron and joining with the narrow black suture. **Female** is similar in colored to the male, head short, without a post ocular spine; elytra with a broader black suture. Subspecies *elegans* is similar to *mouhotii*, but the color is less bright and more orange, the elytral black suture in male is broader, triangular shaped.

Length male 35-70 mm, female 30-44 mm.

L17a. *Odontolabis mouhotii mouhotii* Parry, 1864

ด้วงคีมกว้างเหลือ้ง

Distribution: Myanmar, Thailand (Fang, Phrae, Wiang Pa Pao, Wang Chin).

L17b. *Odontolabis mouhotii elegans* Möllenkamp, 1901

ด้วงคีมกว้างเหลือ้งทอง

Distribution: Myanmar, Cambodia, Thailand (Khao Yai, Kanchanaburi, Chanthaburi).

(1.1 X)



(Wang Chin)



(Wiang Pa Pao)



♂

L17a. *Odontolabis mouhotii mouhotii*

(Khao Yai)

f. *amphiodont*
(Khao Yai)f. *priodont*
(Kanchanaburi)L17b. *Odontolabis mouhotii elegans*

L18. *Odontolabis siva siva* (Hope & Westwood, 1845)

ด้วงคีมทองขวี่

Entirely black. **Male**, head bears a sharp post ocular spine; pronotum with an additional front tooth in large male which absent in small male. **Female**, head is short without a post-ocular spine; pronotum with lateral and hind teeth similar to the small male.

Length male 47-90 mm, female 46-53 mm.

Distribution : India, Bangladesh, Nepal, Bhutan, Myanmar, China, Laos, Vietnam, Malaysia, Thailand (Khao Yai, Wiang Pa Pao, Doi Pui).

(1.1 X)



L18. *Odontolabis siva siva*

Neolucanus Thomson, 1862

Eyes are completely divided by canthus into the upper and the lower parts; pronotum angulated at lateral and hind angles; mid and hind tibiae without lateral spines. Head and mandibles in male are longer than those of the female and strongly developed.

L19. ***Neolucanus brevis*** Boileau, 1899

ด้วงคีมไม้ไผ่ดำเล็ก

Male, small black, very short body; head is large, canthus rather rounded in front of the eye; mandibles short, strongly serrated at the inner edge, slightly curved upwards; pronotum broad with a blunt lateral angle and an obtuse hind angle of each side. **Female**, rather broad and very short; the front tibiae are a little shorter than those of the male. Subspecies ***rondoni*** the shape of the mandibles are more sinous externally than those of ***brevis***.

Length male 22-31, female 22-26 mm.

L19a. ***Neolucanus brevis brevis*** Boileau, 1899

ด้วงคีมไม้ไผ่ดำเล็กธรรมดา

Distribution: Myanmar, China, Vietnam, Thailand (Wiang Pa Pao, Doi Inthanon, Doi Pah Hom Pok).

L19b. ***Neolucanus brevis rondoni*** Lacrois, 1972

ด้วงคีมไม้ไผ่ดำเล็กน่าน

Distribution: Laos, N. Thailand (Nan).

L20. ***Neolucanus castanopterus*** Hope, 1831

Neolucanus castanopterus flavipennis Boileau, 1914

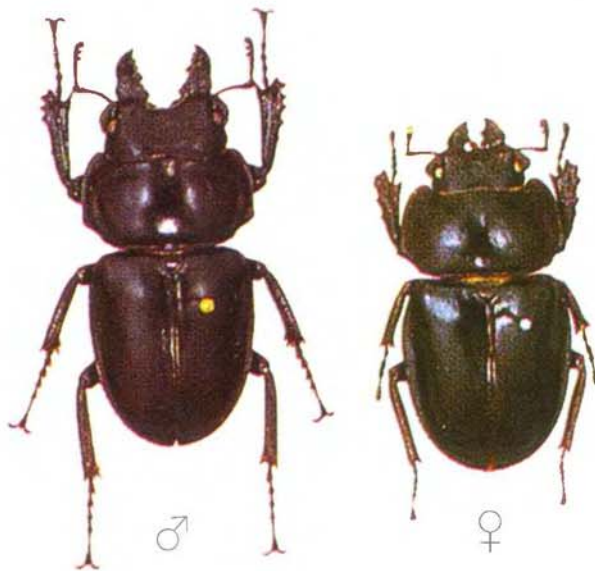
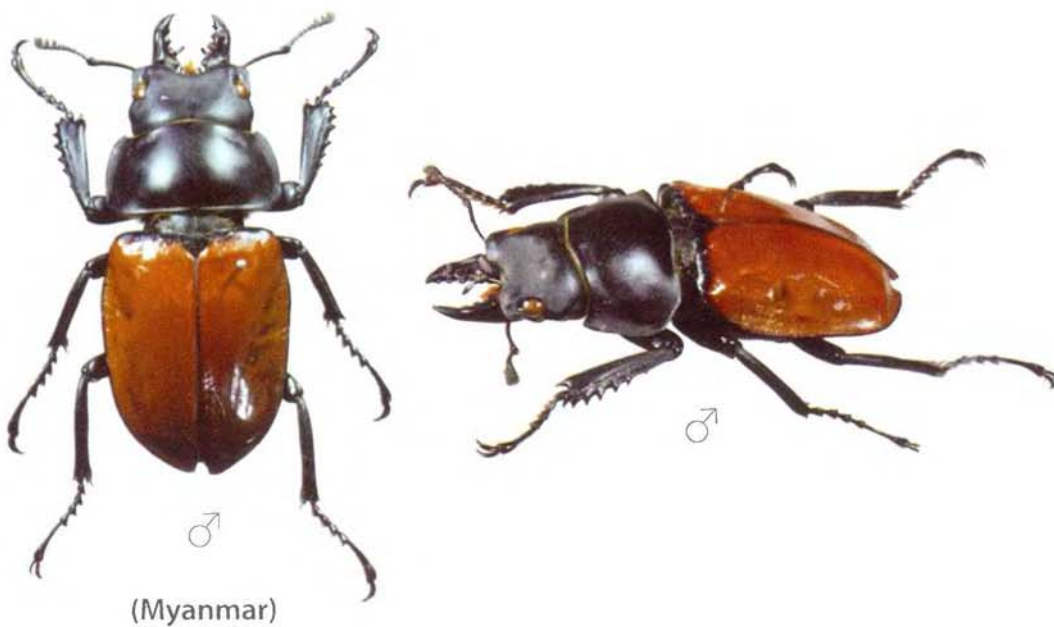
ด้วงคีมไม้ไผ่แดงเล็ก

Black with elytra bright reddish-yellow. **Male**, canthus is fairly angular in front of the eyes, less angulate than that of ***N. sinicus*** and also smaller in size; mandibles narrow, as long as the head; elytra long nearly parallel-sided. **Female**, canthus is rather rounded at lateral margins; mandibles broad at base and shorter than those of the male.

Length male 32-36 mm, female 26 mm.

Distribution: Myanmar, Vietnam, Thailand (Doi Inthanon).

(1.1 X)

L19a. *Neolucanus brevis brevis*(after Mizunuma & Nagai)
L19b. *Neolucanus brevis rondoni*

(Myanmar)

L20. *Neolucanus castanopterus flavipennis*

L21. *Neolucanus giganteus* Pouillaude, 1914

ด้วงคีมไม้ไผ่ยักษ์

Male, burnt brown; canthus is sharply angular at sides; mandibles strongly serrated, straight at the inner edge except the tips slightly curved inwards; pronotum with sharp lateral and hind angles. **Female**, the same colored, canthus is rather square at sides.

Length male 60 mm, female 42 mm.

Distribution: S. China, Laos, Vietnam, Thailand (Wiang Pa Pao, Kanchanaburi).

L22. *Neolucanus latus* Boileau, 1902

ด้วงคีมไม้ไผ่สองสี

Entirely black or black and yellow on elytra. **Male**, canthus is bluntly angular in front, but not prominent; mandibles pointed forwards, serrated at the inner edge, both of them contacting each other only the end, usually the left one being upon the right one; pronotum generally black, sometimes tinted with red, but normally not in the middle, with obtuse lateral and hind angles; elytra entirely black or black with yellow at outer margins; the suture not very narrow behind. **Female**, canthus is rather rounded and prominent, mandibles short.

Length male 27-36 mm, female 27-39 mm.

Distribution: India, Myanmar, Laos, Thailand (Doi Pah Hom Pok, Muang Pan, Doi Inthanon).

L23. *Neolucanus nitidus maekajanensis* Ichikawa & Fujita, 1987

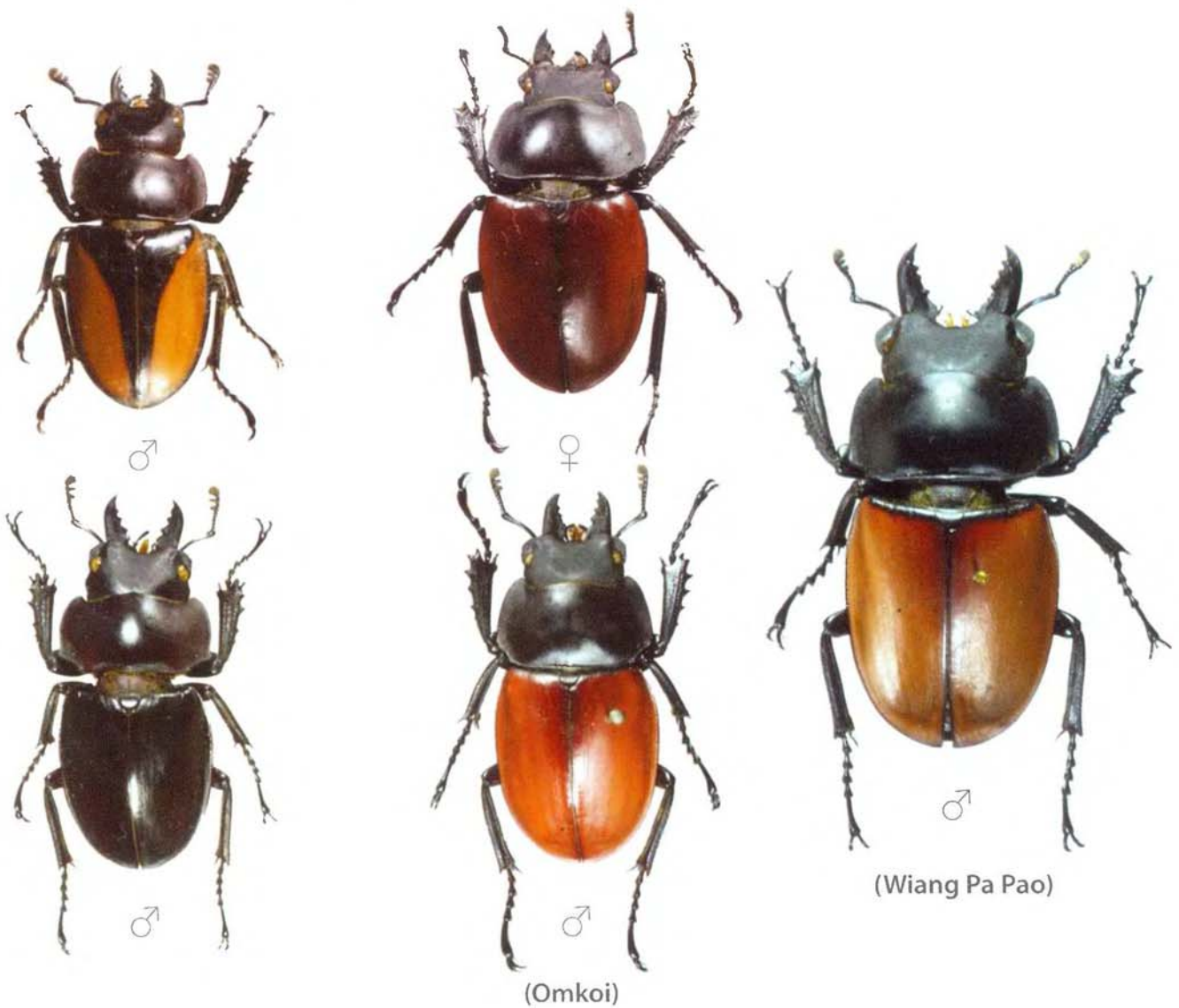
ด้วงคีมไม้ไผ่แดงใหญ่ ด้วงคีมไม้ไผ่แดงแม่ชะจาน

Black and resinous-red above the elytra. **Male**, canthus is slightly rounded in front of the eye, not prominent; mandibles in large developed male each with a sharp erect tooth near the end, pointed upwards; pronotum broad with lateral angle blunt and hind angle sharp; elytra rather broad, oval shaped. **Female**, mandibles are short.

Length, male 36-50 mm, female 40-41 mm.

Distribution: Confined to N. Thailand (Wiang Pa Pao, San Kamphaeng).

(1.2 X)

L21. *Neolucanus giganteus*L22. *Neolucanus latus*L23. *Neolucanus nitidus maekajanensis*

(Wiang Pa Pao)

(Omkoï)

L24. *Neolucanus parryi* Leuthner, 1885

ด้วงคีมไม้โอแปร์

Male, black or reddish-black and yellow colored; oval shaped, mandibles are not long, strongly serrated at the inner edge and nearly straight at the outer edge; canthus bluntly angular in front and rather prominent; pronotum with the front angle pointed, the sides curved to the blunt lateral angle and concave to the sharp hind angle. Elytra are yellow with a black patch dilated at base and gradually narrow at the apex of each elytron, the outer margins with black narrow ridges. **Female** is similar to the male, but shorter and broader; canthus, rounded and prominent; mandibles short.

Length male 31-41 mm, female 31-43 mm.

Distribution: Myanmar, China, Laos, Cambodia, Vietnam, Thailand (Doi Pui, Doi Inthanon, Doi Pha Hom Pok, Wiang Pa Pao).

L25. *Neolucanus saundersi maximus* Houlbert, 1912

ด้วงคีมไม้ไผ่ดำยักษ์

Entirely black. **Male**, canthus is sharply angular in front; mandibles in small male serrated and rather straight at the inner edge and curved inwards at tips, but in large developed male, the mandibles strongly compressed, curved instead of straight, basal part smooth and serrated only the front part, with two erect teeth, pointed upwards near the base and near the tip of each mandible; pronotum sharply angulated at lateral margins and hind angles. **Female** is broader than the male; canthus sharply angular and prominent.

Length male 44-65 mm, female 40-53 mm.

Distribution: China, Laos, Vietnam, Thailand (Doi Pui, Fang, Wiang Pa Pao).

(1.2 X)

L24. *Neolucanus parryi*L25. *Neolucanus saundersi maximus*

- L26. *Neolucanus sinicus* Saunders, 1854
Neolucanus sinicus pseudopacus Houlbert, 1914
 ตัวงคิมนีโอตำแม่แจ่ม

This species is very similar to *N. giganteas* and *N. s. maximus*, but smaller and mandibles are curved upwards. **Male**, entirely black, canthus is sharply angular; mandibles serrated at the inner edge, gradually narrower in front and well upturned near the tips.

Length 30-37 mm.

Distribution: Myanmar, S. China, N. Vietnam, Thailand (Doi Inthanon).

Figulus Mac Leay, 1819

Black with narrow, elongate body; with 10 segmented antenna; elytra are strongly grooved longitudinally.

-
- L27. *Figulus caviceps* Boileau, 1902
 ตัวงคิมพิกุลส์หัวเหลี่ยม

Black, smooth and shining; this species can be recognized by the backwards extensions of the mentum in male. The lateral parts of the head is very quadrate

Length 9-15 mm..

Distribution: India, Myanmar, Thailand (Chiang Mai, Nakhon Ratchasima).

Nigidius Mac Leay, 1819

The two sexes are similar, small black, parallel-sided, rather shining; scutellum small and acute angled; mandibles each of them with an erect process above near the base, curving towards each other.

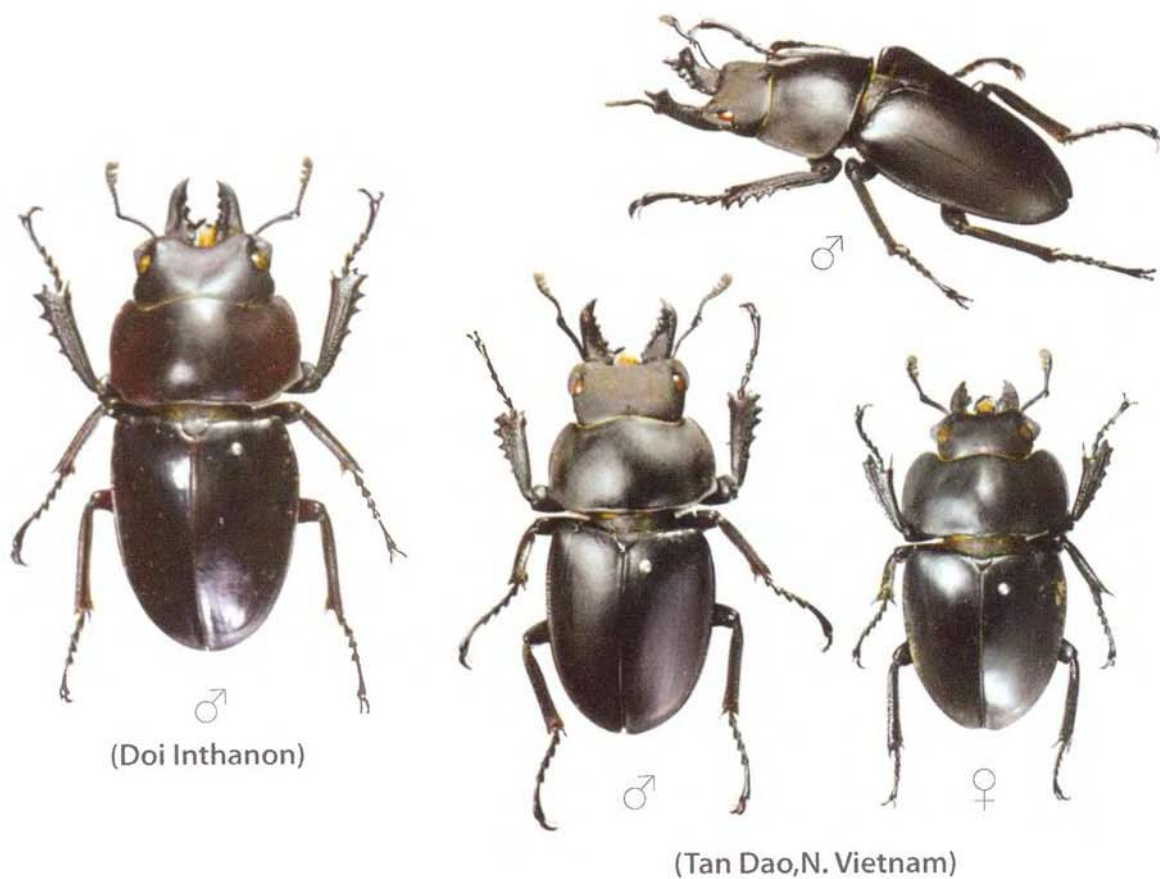
-
- L28. *Nigidius birmanicus* Boileau, 1911
 ตัวงคิมแคะระพม่า

Body is elongate, head concave at sides, with front angle blunt and hind angle sharp; mandibles with smooth appendages, not lobed behind the base.

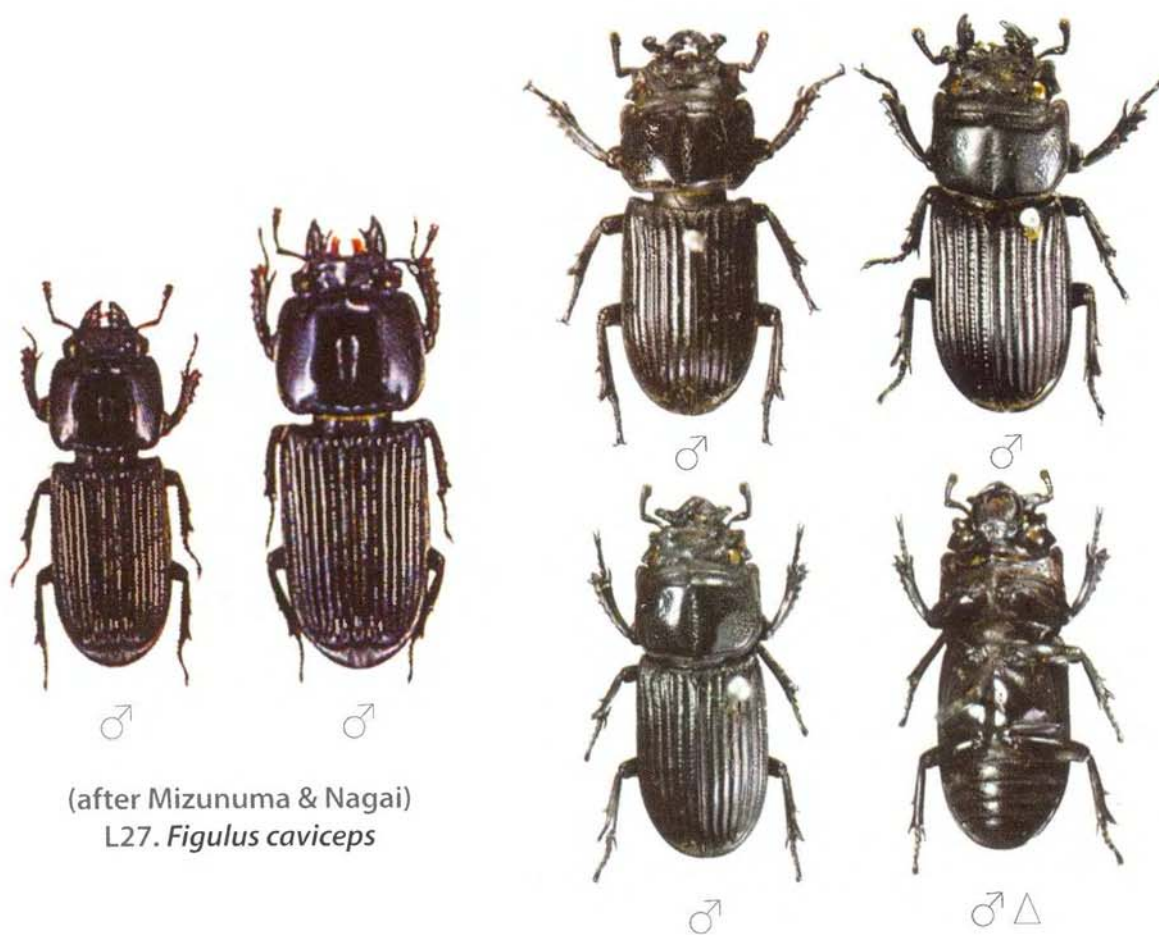
Length 16-18 mm.

Distribution: Myanmar, Thailand (Wiang Pa Pao, Doi Pha Hom Pok).

(1.2 X)

L26. *Neolucanus sinicus pseudopacus*

(2.0 X)

(after Mizunuma & Nagai)
L27. *Figulus caviceps*L28. *Figulus laoticus*

L29. ***Nigidius dawnae*** Gravely, 1915

ด้วงคีมแคะกระเขี้ยวพอง

Body is very short and broad; head rounded at sides; mandibles strongly lobed behind the base.

Length 15-18 mm.

Distribution: India (Dawna Hills, where the name is implied for), Myanmar, Thailand (Wiang Pa Pao, Doi Pha Hom Pok).

L30. ***Nigidius distinctus*** Parry, 1873

ด้วงคีมแคะกระขอบหน้าเว้า

It is close similar to *N. elongatus* but with sinuous at front margin of ocular canthus.

Length 15-18 mm.

Distribution: India, Myanmar, Thailand (Chiang Mai, Nakhon Ratchasima).

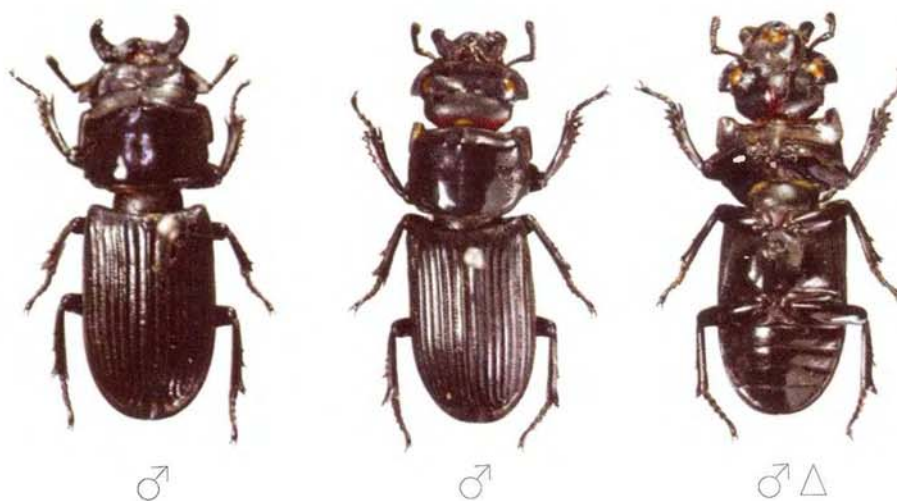
L31. ***Nigidius elongatus*** Boileau, 1902

ด้วงคีมแคะกระยาว

Body is elongate, head with the canthus rounded at sides and sharply at hind angles; mandibles, each without a lobe behind the base.

Length 17-20 mm.

Distribution: Myanmar, Thailand (Doi Pha Hom Pok, Chiang Dao, Wiang Pa Pao).

L29. *Nigidius dawnae*(after Mizunuma & Nakai)
L30. *Nigidius distinctus*L31. *Nigidius elongatus*

Allotopus Albers, 1894

L32. *Allotopus moellenkampi* (Fruhstorfer, 1894)

Allotopus moellenkampi babai Mizunuma, 1994

ด้วงคีมทองกาญจน์

Black, clothed with golden green, remaining some irregular black above pronotum and elytra; pronotum is strongly punctured, but shining, elytra fairly finely punctured and shining.

Length male 50-70 mm, female 38-51 mm.

Distribution: S. Myanmar, W. and S. Thailand (Thong Pha Phum – Kanchanaburi, Khlong Nakha - Ranong).

Cyclommatus Parry, 1863

Head is dark greenish-red, darker than pronotum and elytra; eyes not completely divided; antennal club composed of three joints; pronotum usually with a reddish-black stripe at median; elytra broader than the base of pronotum; legs slender, front tibiae not forked at the end.

L33. *Cyclommatus bicolor* (Bomans, 1991)

ด้วงคีมเนื้อทรายสองสี

Length 9-15 mm.

Distribution: India, Myanmar, Thailand (Chiang Mai, Nakhon Ratchasima).

L34. *Cyclommatus canaliculatus canaliculatus* Ritsema, 1891

ด้วงคีมเนื้อทรายมลายู

A malayan species of medium brown, with relatively long mandibles in males. Female is dark brown, with short mandibles.

Length male 21-53 mm, female 17-22 mm.

Distribution: India, Myanmar, Thailand (Chiang Mai, Nakhon Ratchasima).

L35. *Cyclommatus lunifer* Boileau, 1905

ด้วงคีมเนื้อทรายเขี้ยวจันทร์

Medium sized, yellowish brown. It is easily recognized by the very developed epistome. This species was the first record from Thailand in Pinratana & Maes, 2003.

Length male 30-50 mm, female 23-24 mm.

Distribution: Myanmar, Malaysia, Kalimantan, Sumatra, Thailand (Kanchanaburi).

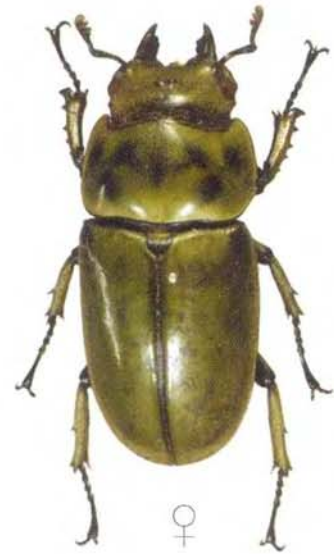
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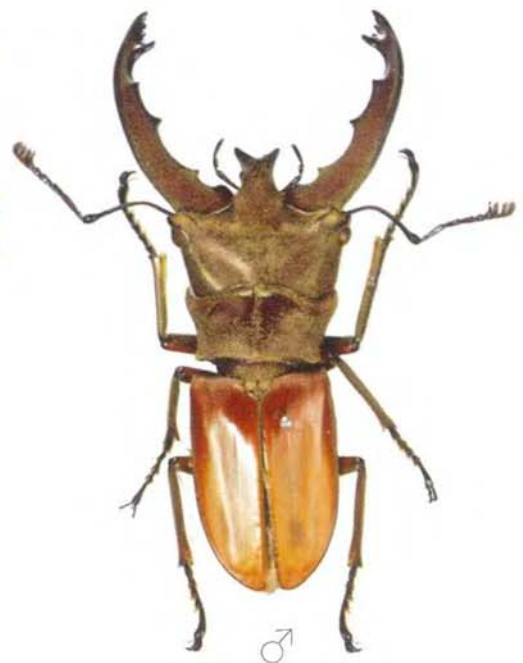
(S, Myanmar)



(Kanchanaburi)



(Ranong)

L32. *Allotopus moellenkampii babai*L33. *Cyclommatus bicolor*L34. *Cyclommatus canaliculatus*L35. *Cyclommatus lunifer*

L36. *Cyclommatus multidentatus* (Westwood, 1848)

ด้วงคีมเนื้อทรายพื้นผสม

Entirely dark red body including head, mandibles, pronotum and elytra; male and female are of the same colored, pronotum without black median line.

Length male 23-36 mm, female 16-20 mm.

Distribution: India, Myanmar, Thailand (Doi Pha Hom Pok, Lampang).

L37. *Cyclommatus pahangensis* (Nagel, 1936)

Cyclommatus pahangensis chiangmaiensis Mizunama, 1994

ด้วงคีมเนื้อทรายเชียงใหม่

Male, pronotum bears a broad reddish-black stripe at median; mandibles slightly curved downwards, rather straight and serrated at the inner edge in small male; with a strong basal tooth, an internal tooth at middle edge and forked at tips in large male. **Female**, similar colored, mandibles are short, compressed laterally, curved inwards and forked at tips.

Length male 32-37 mm, female 18 mm.

Distribution: Thailand (Doi Pui, Chiang Dao, Wiang Pa Pao, Nam Nao).

L38. *Cyclommatus saltini* (Bomans, 1991)

ด้วงคีมเนื้อทรายฝาง

This species is similar to *C. pahangensis*, but relatively smaller size. Pronotum bears a very narrow dark median stripe, sometimes not well-marked; mandibles paler colored, brownish-red instead of dark red.

Length male 19-30 mm, female 18 mm.

Distribution: Myanmar, Thailand (Doi Pha Hom Pok, Doi Pui).



(1.5 X)



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L36. *Cyclommatus multidentatus*L37. *Cyclommatus pahangensis chiangmaiensis*

♂



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L38. *Cyclommatus saltini*

Rhaetulus Westwood, 1871

Club antenna is composed of three joints; mandibles long and slender, bearing two basal teeth of each mandible, one pointed upwards and the other one pointed downwards, and also bearing a middle tooth pointed upwards.

L39. ***Rhaetulus didieri*** DeLisle, 1970

ด้วงคีมสมันทองมาเลย์

Mandibles are rather long and forming a rectangle shaped; pronotum usually black or marked with yellow; elytra rather dark, with a yellow patch on each elytron, somewhat variable in each specimen.

Length male 62-70 mm.

Distribution: Malaysia, S. Thailand (Chumphon).

L40. ***Rhaetulus speciosus*** Boileau, 1911

ด้วงคีมสมันทองเหนือ

Male, mandibles are square shaped; elytra black with a broad longitudinal yellow patch covering a half of each elytron. **Female** is black, slender; pronotum serrated at sides, the hind angle rounded; middle and hind tibiae, each with a strong lateral spine. Pronotum in subspecies ***speciosus*** is somewhat variable in black marked with yellow or reddish yellow whereas that of ***boileau*** generally black.

Length male 48-56 mm, female 28 mm.

L40a. ***Rhaetulus speciosus boileau*** Didier, 1925

ด้วงคีมสมันทองน่าน

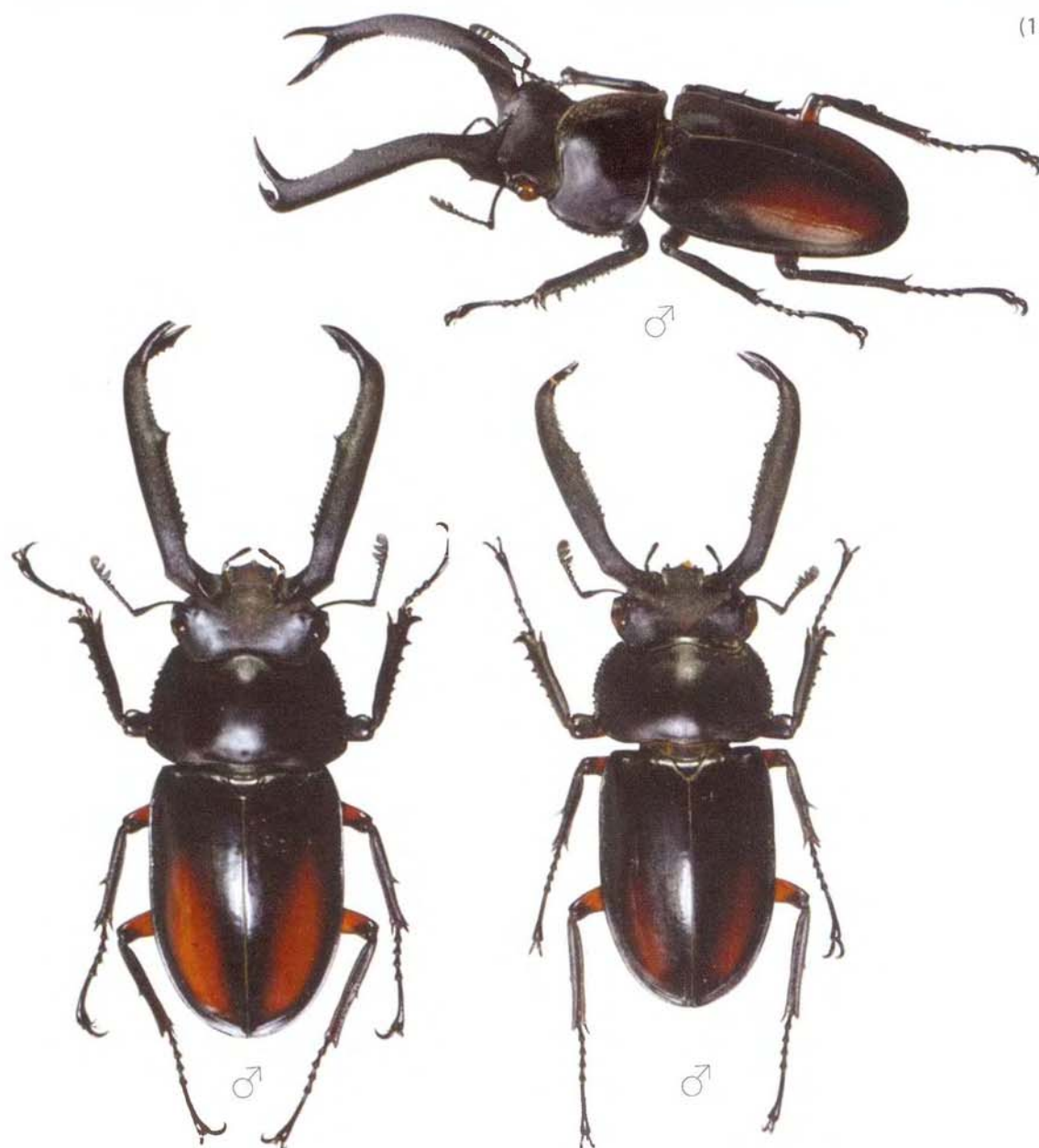
Distribution: N. Vietnam, Laos, Thailand (Doi Phu Kha - Nan).

L40b. ***Rhaetulus speciosus speciosus*** Boileau, 1911

ด้วงคีมสมันทองเหนือ

Distribution: Wiang Pa Pao, Doi Pha Hom Pok, Doi Pui).

(1.3 X)

L39. *Rhaetulus didieri*L40a. *Rhaetulus speciosus boileaui*

Prismognathus Motschulsky, 1860

L41. *Prismognathus kurosawai* Fujita & Ichikawa, 1986

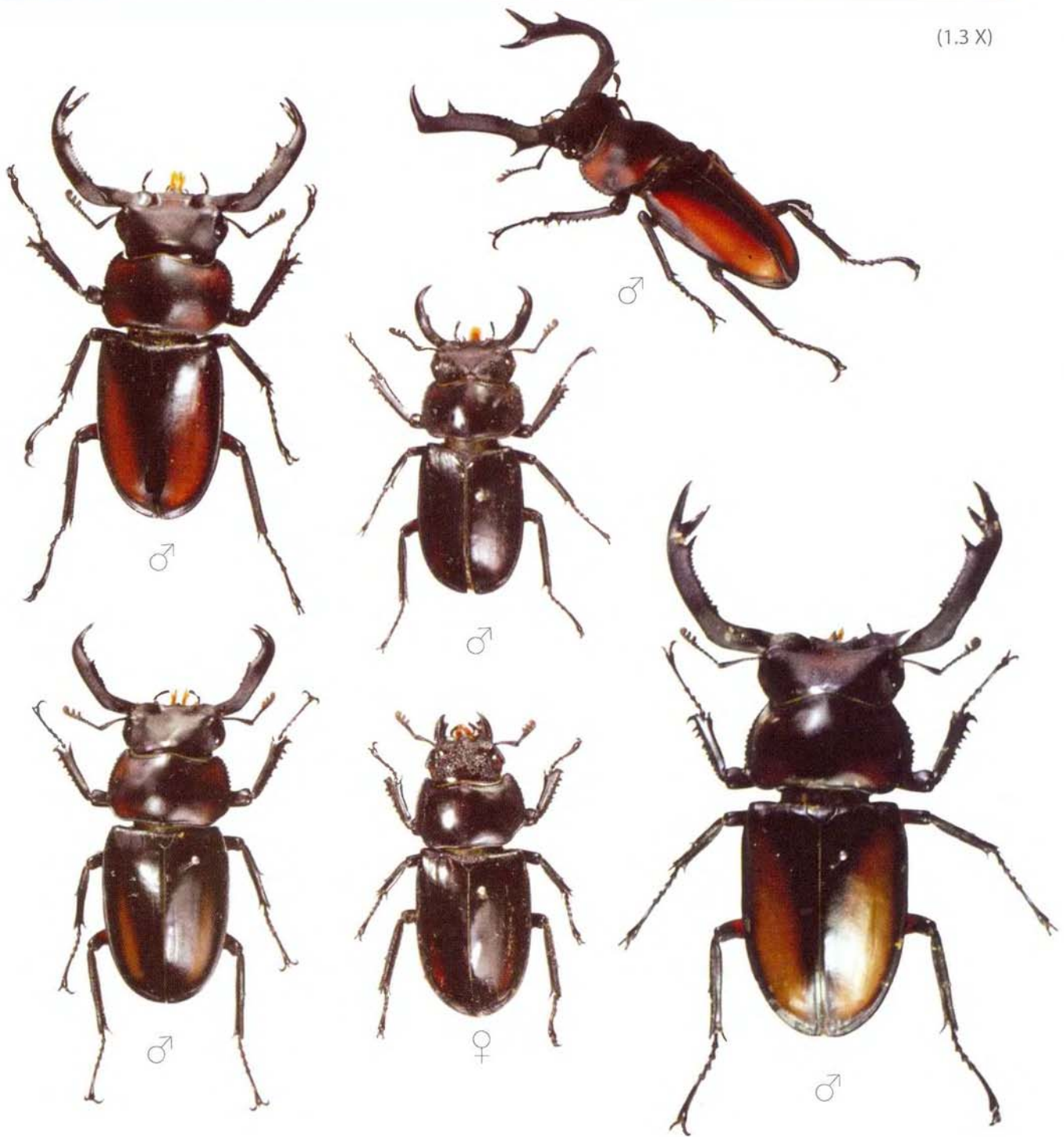
ด้วงคีมแก้วขุนวาง

Male, reddish-black, slender and very shining; antennal is club composed of three joints; eyes not completely divided and prominent; mandibles short, rather broad at base tapered and curved inwards at the outer edge towards the tips; pronotum narrower at base than the elytra, with front angle blunt, lateral and hind angles obtuse; elytra black smooth and shining, with a narrow yellow stripe along the lateral margin from the middle to some distance before the apex of each elytron. **Female** is generally black; pronotum with similar angles to those of the male; elytra rather broad and rounded at apices.

Length male 23 mm, female 24 mm.

Distribution: N. Thailand (Doi Inthanon, Wang Chin).

(1.3 X)

L40b. *Rhaetulus speciosus speciosus*

(after Mizunuma & Nagai)

L41. *Prismognathus kurosawai*

Prosopocoilus Hope & Westwood, 1845
 Antenna 10-joints, with 3-joints club, the seventh joint sometimes with a sharp supplementary process; eyes not completely divided; body long and slender.

42. *Prosopocoilus astacoides astacoides* (Hope, 1840)

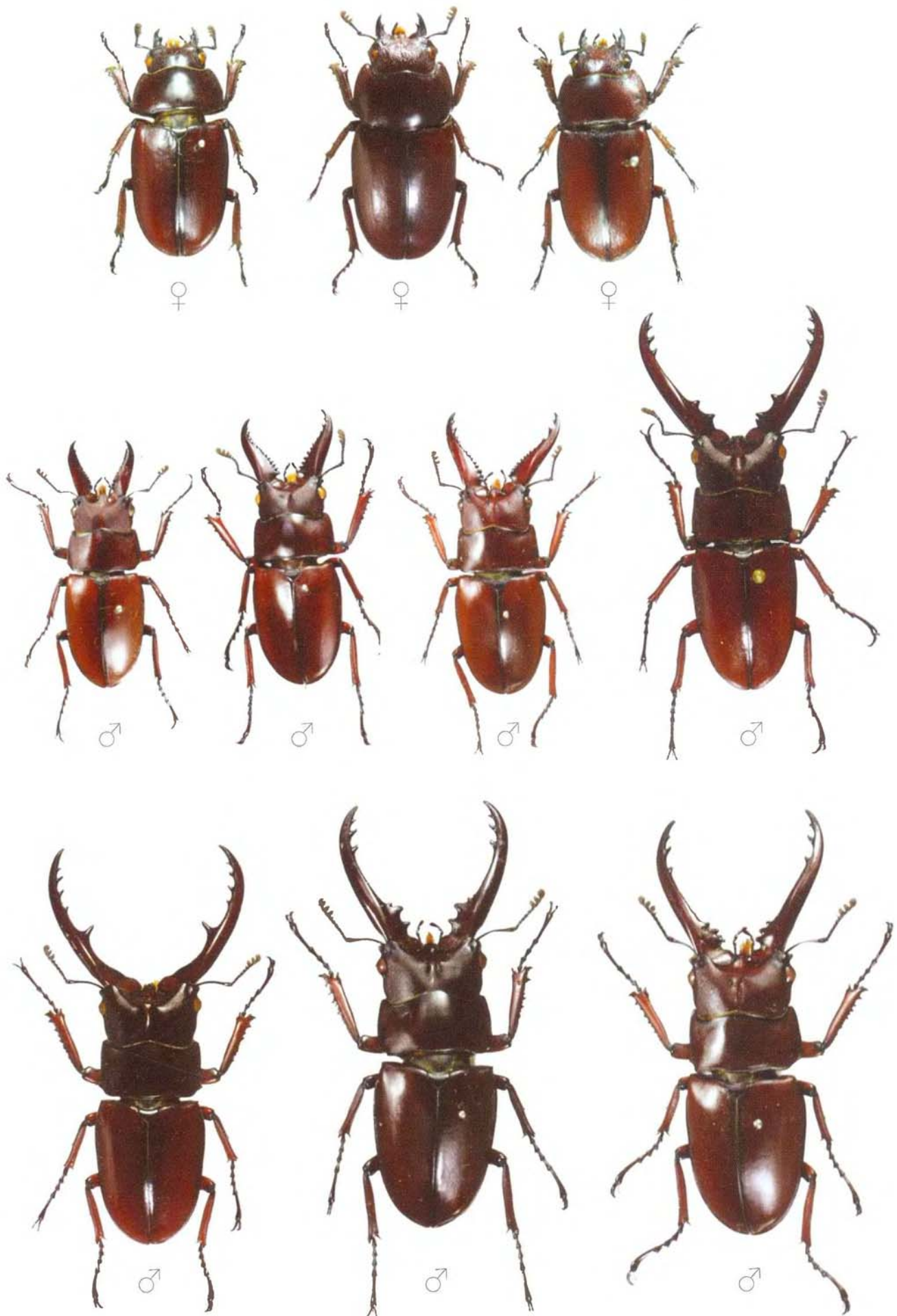
ด้วงคีมแดงธรรมดา

Male, reddish to dark red, very smooth and shining especially the mandibles; head bears a sharp angle before the eye at lateral angle and with a depressed groove at median line. Canthus is very narrow and extending to the middle of the eye; mandibles slightly curved downwards and inwards in front, usually with a set of serrate teeth near the base and three to four sharp teeth near the tip in small male, the serrate teeth near the base become bigger sized and reduced in number to three, two, one in larger males or none in the largest male which bearing a strong a middle tooth instead. **Female** is oval shaped, head small and pronotum rather convex.

Length male 28-65 mm, female 22-27 mm.

Distribution: India, Bhutan, Bangladesh, Myanmar, Thailand (Wiang Pa Pao, Doi Pui, Nam Nao).

(1.2 X)

L42. *Prosopocoilus astacoides astacoides*

L43. *Prosopocoilus buddha* (Hope, 1842)

ด้วงคีมบุद्धา

Shining black. **Male** is highly variable; head depressed in the middle front and laterally, the margins behind the eyes slightly rounded; canthus narrowed extending to the middle of the eye; mandibles short, nearly straight externally, with a basal tooth and a row of serrate teeth from the tip far beyond the middle of each mandible in small male, but mandible long and slender in large male, with a broad basal tooth, a small tooth near to the middle and some numbers of teeth near the tip of each mandible, but usually not symmetrical between both mandibles, the tips forked; pronotum marginated and straight at sides; elytra very smooth and shining. **Female** is elongate, with short mandibles, dorsum very smooth and shining.

L43a. *Prosopocoilus buddha buddha* (Hope, 1842)

ด้วงคีมบุद्धาธรรมดา

Length male 22-49 mm, female 22-23 mm.

Distribution: India, Bangladesh, Thailand (Wiang Pa Pao, Doi Pui, Chiang Dao, Phu Khieo).

L43b. *Prosopocoilus buddha kuijteni* (Bomans, 1978)

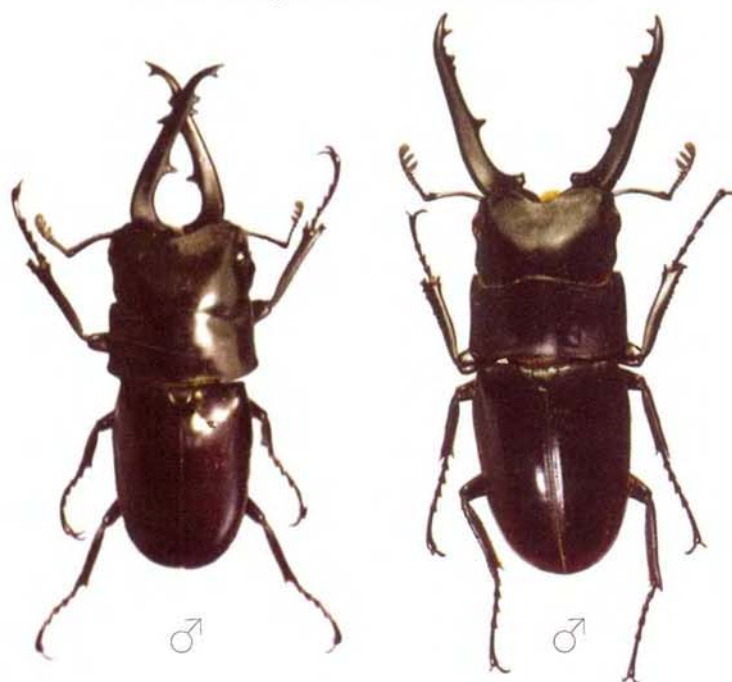
ด้วงคีมบุद्धาไต้

Following Pinratana & Maes (1999), *P. buddha buddha* in the south is classified as *P. buddha kuijteni*, the mandibles especially of the large male are always symmetrical. 1 male, Klong Nakha - Ranong, 6.IV.1991 is at the author's collection.

Length 46 mm.

Distribution: Malaysia, S. Thailand (Ranong).

(1.3 X)

L43a. *Prosopocoilus Buddha Buddha*L43b. *Prosopocoilus Buddha kuijteni*

L44. *Prosopocoilus bulbosus* Hope, 1840

Prosopocoilus bulbosus mandibularis (Möllenkamp, 1902)

ด้วงคีมเขี้ยวขน

Male is dark brown, elytra in large developed specimens sometimes reddish brown; head flat and strongly granulated above, canthus broad and extending to the middle of the eye; mandibles broad at base, strongly rugose, slightly curved upwards, the serrate teeth lining almost in a straight line and with a very small gap at the base between the closed mandibles in small male, but the gap becomes bigger in large male; pronotum rounded at sides, finely serrated beyond the middle, with a sharp angle there and feebly excised behind. **Female**, elongate; pronotum fairly finely to moderately punctured, serrated at sides; elytra are moderately punctured, but shining.

Length male 24-51 mm, female 27-30 mm.

Distribution: Vietnam, Thailand (Wiang Pa Pao, Nan).

L45. *Prosopocoilus crenulidens* (Fairmaire, 1895)

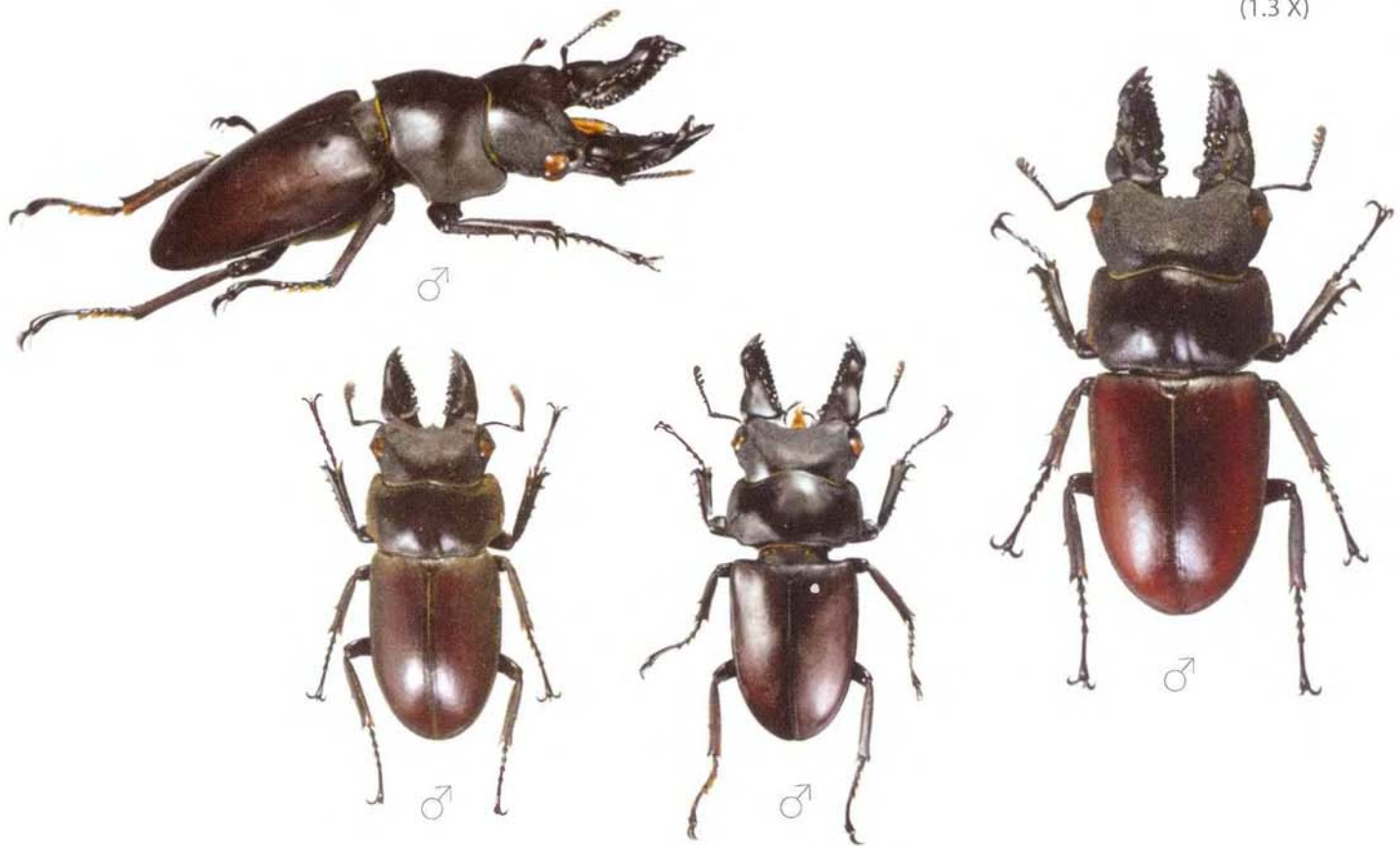
ด้วงคีมตาลฟันเหลี่ยม

Male, dark red, slight shining; head is rather square and flat at the middle of the front; mandible slightly curved downwards and inwards, with a basal tooth rather blunt or square in large male, a small sharp tooth near the tip in small male, but blunt or square in large male, the inner edge with a number of irregular teeth.

Length 20-37 mm.

Distribution: China, Laos, Vietnam, Thailand (Doi Pui, Doi Pha Hom Pok, Chanthaburi, Nan).

(1.3 X)

L44. *Prosopocoilus bulbosus mandibularis*L45. *Prosopocoilus crenulidens*

L46. *Prosopocoilus giraffa giraffa* (Olivier, 1789)

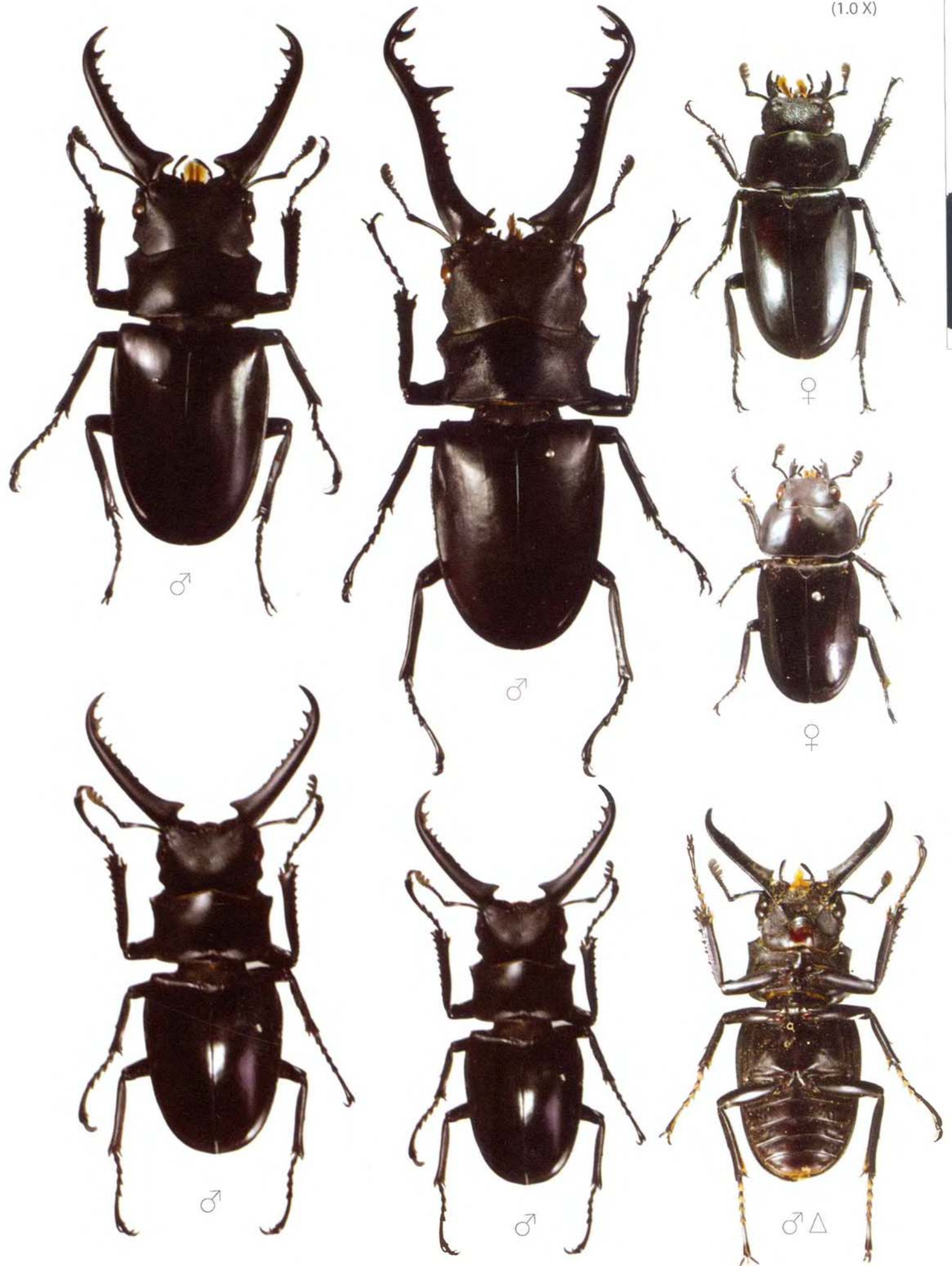
ด้วงคีมยีราฟ ด้วงคีมหยักสองต่อ

The only one species belongs to the subgenus *Cladognathus* which sometimes is known as the genus. **Male**, head bears a post-ocular spine, rather rounded; pronotum with two sharp lateral teeth and blunt hind angle in small male, the hind angle sharp in large male; mandibles long and strongly curved near the tips, the inner edge with a broad basal tooth, a few teeth in small male, and become more teeth in medium male, the advance form of the large male each mandible with a strong tooth beyond the middle, two set of small teeth lining before and after it and bearing a small sharp tooth near the tip. **Female** is elongate, canthus narrow in front and extending to nearly the middle of the eye; pronotum with front angle blunt and hind angle rounded.

Length male 45-108 mm, female 31-40 mm.

Distribution: Nepal, Bhutan, India, Myanmar, Laos, Cambodia, China, Taiwan, Vietnam, Thailand (Wiang Pa Pao, Doi Pui, Doi Saket, Doi Pha Hom Pok, Khao Yai).

(1.0 X)

L46. *Prosopocoilus giraffa giraffa*

L47. *Prosopocoilus inquinatus* (Westwood, 1848)

ด้วงคีมสองแถบ

Black, smooth and shining, with a broad longitudinal orange-yellow stripe at lateral margins of each elytron, pronotum and hind part of the head. **Male**, mandibles are strongly curved, each with three to four small teeth at the inner edge of the base; femora reddish-yellow. **Female**, head is shorter than broad, mandibles short. Subspecies *nigrinus* is very similar to *biplagiatus*, but with black legs (femora) and the orange-yellow stripes above elytra and pronotum narrower than those of the former subspecies.

Length male 24-30 mm, female 17-25 mm.

L47a. *Prosopocoilus inquinatus biplagiatus* (Westwood, 1855)

ด้วงคีมสองแถบขาแดง

Distribution: Pakistan, Nepal, India, Myanmar, China, Thailand (Doi Pui, Samoeng).

L47b. *Prosopocoilus inquinatus nigrinus* (Boileau, 1905)

ด้วงคีมสองแถบขาคำ

Distribution: Bangladesh, Myanmar, China, Laos, Cambodia, Vietnam, Malaysia, Thailand (Phu Khieo, Wang Chin, Doi Pha Hom Pok).

(1.2 X)



♀

(Wiang Pa Pao)



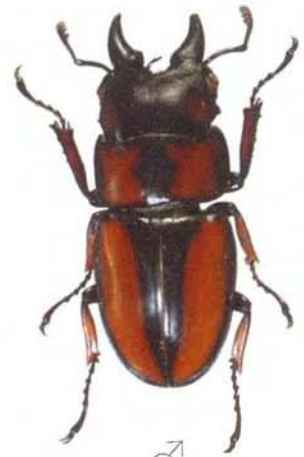
♂

(Kampuan)



♂

(Doi Pah Hom Pok)



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L47a. *Prosopocoilus inquinatus biplagiatus*

♀



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♀

(Wang chin)



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♀

(Wang chin)



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△



♂

(Wang chin)



♂



♂

(Phu Khieo)



♂

(Wang chin)

L47b. *Prosopocoilus inquinatus nigritus*

L48. *Prosopocoilus jenkinsi* (Westwood, 1848)

ด้วงคีมแดงพื้นเหลือง

Dark red, long and slender and not very shining above; **male**, head is rather square, canthus broad at front with an obtuse angle and extending to the middle of the eye, mandibles long, with a small basal tooth, a small tooth near the tip and irregular teeth at the inner edge of each mandible in small male, the basal tooth becomes larger and with two more internal teeth near the tip in large male, the internal teeth sometimes broad, square shaped.

Length 25-40 mm.

Distribution: India, Bhutan, Bangladesh, Myanmar, Thailand (Khlung Nakha - Ranong, Kanchanaburi, Chanthaburi).

L49. *Prosopocoilus kannegieteri* (Van de Poll, 1895)

ด้วงคีมเหลืองหัวหนามคู่

Black and yellow species, very similar to *P. suturalis*, the in front of head bears two pairs of tubercles and mandibles each with peculiar double teeth near apex.

Length male 22-24 mm, female 19-20 mm.

Distribution: Malaysia, Kalimantan, Sumatra, Phillipnes, Thailand (Surat Thani).



(1.2 X)

♂
(Trat)

♂

(Mae Taeng)



♂



♂

(Kanchanaburi)



♂

(Kampuan)



♂

(Phrae)

L48. *Prosopocoilus jenkinsi*

♂



♂



♂

(Cameron Highland, W. Malaysia)

L49. *Prosopocoilus kannegieteri*

- L50. *Prosopocoilus mohnikei* (Parry, 1873)
Prosopocoilus mohnikei pseudospineus Mizunuma, 1994

ด้วงคีมเหลืองหัวหนามพม่า

This species is very similar to *P. spineus superbis* in peculiar shaped of mandibles in male and curved tibiae in female, but the coloration and the geographic distribution are different. **Male**, head dark reddish-yellow, prothorax and elytra yellow, with a black median stripe and black at elytral suture. Female is black, with curved tibiae.

Length male 37-49 mm, female 22-23 mm.

Distribution: S. Myanmar, W. and S. Thailand (Phangnga, Kanchanaburi).

- L51. *Prosopocoilus occipitalis* (Hope & Westwood, 1845)

ด้วงคีมเหลืองจุดสั้นหลังออกดำ

Pale brownish-yellow species, pronotum bears a prominent black spot in the middle. The shape of mandibles is peculiar. Female is similar to that of *P. suturalis* except the black spot in the middle of pronotum.

Length male 23-55 mm, female 17-26 mm.

Distribution: India, Myanmar, Thailand (Chiang Mai, Nakhon Ratchasima).

- L52. *Prosopocoilus oweni* Hope, 1845

ด้วงคีมปากคืบโค้ง

Small dark reddish-brown to black species, with peculiar shaped of mandibles and pronotum with a prominent post-ocular spine. Subspecies *pascoei* is more reddish-brown than black, the male specimens from Thailand generally with a single basal tooth while those from Malaysia and Vietnam with double basal teeth.

Length male 22-36 mm, female 21-23 mm.

- L52a. *Prosopocoilus oweni ovatus* (Boileau, 1901)

ด้วงคีมปากคืบโค้ง

Distribution: Vietnam, Thailand (Wiang Pa Pao)

- L52b. *Prosopocoilus oweni pascoei* Boileau, 1913

ด้วงคีมปากคืบโค้งได้

Distribution: Malaysia, Thailand (Narathiwat).



♂



♂



(1.4 X)

(Cameron Highland)
L50. *Prosopocoilus mohnikei*

(Cameron Highland)
L51. *Prosopocoilus occipitalis*



♂



♂

(Tam Dao, N. Vietnam)



♂

(Wiang Pa Pao)



♂



♀

L52a. *Prosopocoilus oweni*

- L53. *Prosopocoilus passaloides* (Hope & Westwood, 1845)

ด้วงคีมแดงพื้นผองเล็ก

Small reddish-brown species. The shape of mandibles is peculiar, with a large basal tooth and a large tooth near apex and with small teeth in between those two, tip of mandible strongly curved inwards in large male and obliquely pointed in small male.

Length male 19-32 mm, female 19-20 mm.

Distribution: Malaysia, Kalimantan, Sumatra, Thailand (Wiang Pa Pao).

- L54. *Prosopocoilus sericeus* Westwood, 1844

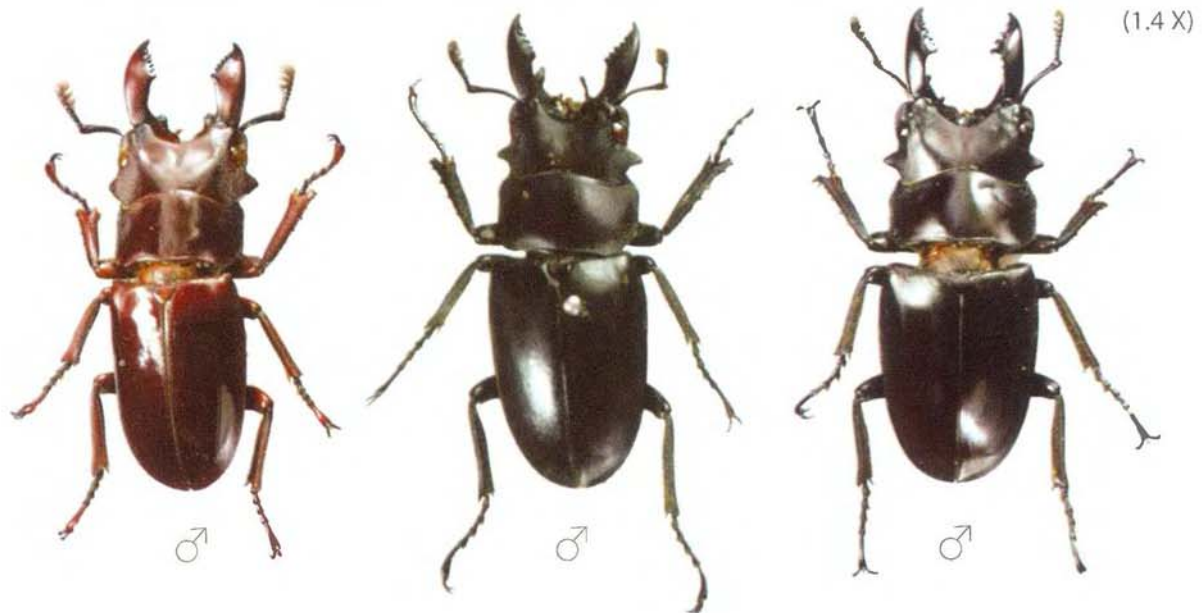
Prosopocoilus sericeus taronii (Lacroix & Ratti, 1983)

ด้วงคีมน้ำตาลผิวขน

Brown, covered with small gray scales. The shape of the mandibles and post-ocular spines make this species similar to *P. oweni ovatus*, but the coloration is different.

Length male 22-34 mm, female 19-20 mm.

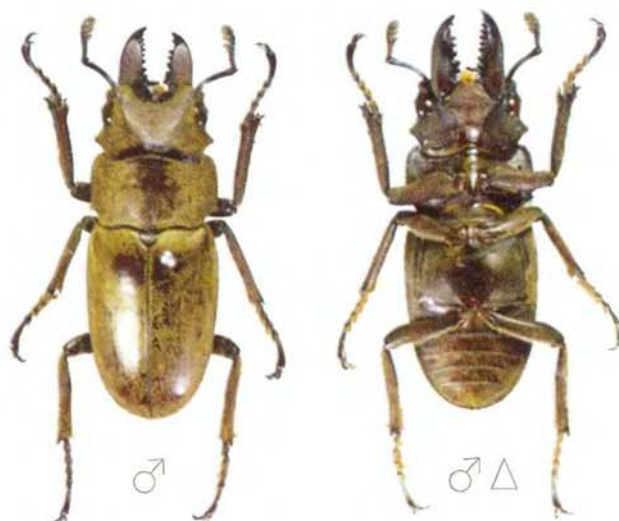
Distribution: Malaysia, S. Thailand (Surat Thani).



(Cameron Highland)
L52. *Prosopocoilus oweni pascoei*



(Cameron Highland)
L53. *Prosopocoilus passaloides*



(Cameron Highland)
L54. *Prosopocoilus sericeus taronii*

- L55. *Prosopocoilus spineus* Bomans, 1994
Prosopocoilus spineus superbus (Bomans, 1971)

ด้วงคีมแดงขาหลังบาน

Black, with sides of pronotum and elytra reddish brown. **Male**, hind tibia is very peculiar shaped, enlarged at apex. **Female** is completely shining black, similar to *P. buddha*, but can be separated by the shape of the apical part of elytra.

Length 9-15 mm.

Distribution: India, Myanmar, Thailand (Chiang Mai, Nakhon Ratchasima).

- L56. *Prosopocoilus squamilateris* (Parry, 1862)

ด้วงคีมเขี้ยวขนหัวเหลี่ยม

Small to medium sized, dark reddish brown. The main characterstic is the shape of wrinkle mandibles similar to *P. bulbosus*, but smaller in size, head is rather square and canthus not broad at the side of the eye. The subspecies *squamilateris* is larger and occurs in a certain area, S. Thailand. According to Panratana & Maes, 2003, it was a new report to Thailand (1 male, IV.1960, in coll of the Deptmt of Agriculture). Photo illustarted was from a large sized specimens from Malaysia, leg. Kawano.

- L56a. *Prosopocoilus squamilateris asaetosus* Bomans, 1994

ด้วงคีมเขี้ยวขนหัวเหลี่ยม

Distribution: Laos, N. Thailand (Doi Pha Hom Pok, Doi Pui)

- L56b. *Prosopocoilus squamilateris squamilateris* (Parry, 1862)

ด้วงคีมเขี้ยวขนหัวเหลี่ยมใต้

Distribution: Malaysia, Kalimanta, Sumatra, Java, S. Thailand (khao Chong).

- L57. *Prosopocoilus suturalis* (Olivier, 1789)

ด้วงคีมเหลืองขีดว้าย

Male, narrowly elongate; brownish-yellow above, antennae, mandibles, legs (except the femora), sides of the head and a lateral spot of each side of pronotum are dark reddish-brown to black, with a well-marked Y-shaped of dark brown, upon the head, the middle of pronotum and suture of elytra. **Female** is oval shaped, similar in colored.

Length male 19-43 mm, female 19-20 mm.

Distribution: India, Bhutan, Myanmar, China, Laos, Vietnam, Thailand (Wiang Pa Pao, Chiang Dao, Kanchanaburi, Phu Khieo).



(1.4 X)



♂



♂

(Mae Taeng)



♂

(Tem Dao, N. Vietnam)

L55. *Prosopocoilus spineus superbus*



♀

L56a. *Prosopocoilus squamilateris asaetosus*



♂



♂

(Phrae)



♂



♂

(Malaysia)



♂

(Tam Dao)



♂

(Wiang Pa Pao)

L56b. *Prosopocoilus squamilateris squamilateris*

L57. *Prosopocoilus suturalis*

L58. *Prosopocoilus zebra zebra* (Olivier, 1789)

ด้วงคีมหลังม้าลาย

Yellow and brown with pattern of coloration on pronotum and elytra which differ from other all species.

Length male 21-54 mm, female 19-30 mm.

Distribution: Myanmar, Malaysia, Kalimantan, Sumatra, Philippines, S. Thailand (Petchaburi).

Macrodorcas Motschulsky, 1862

Narrowly elongate shaped; head is rather flat, clypeal process broad, its front margin nearly straight and the angles sharp in male; mandible long nearly straight with a small tooth pointed obliquely upwards and inwards near the tip.

L59. *Macrodorcas bisignatus giselae* (Bomans, 1991)

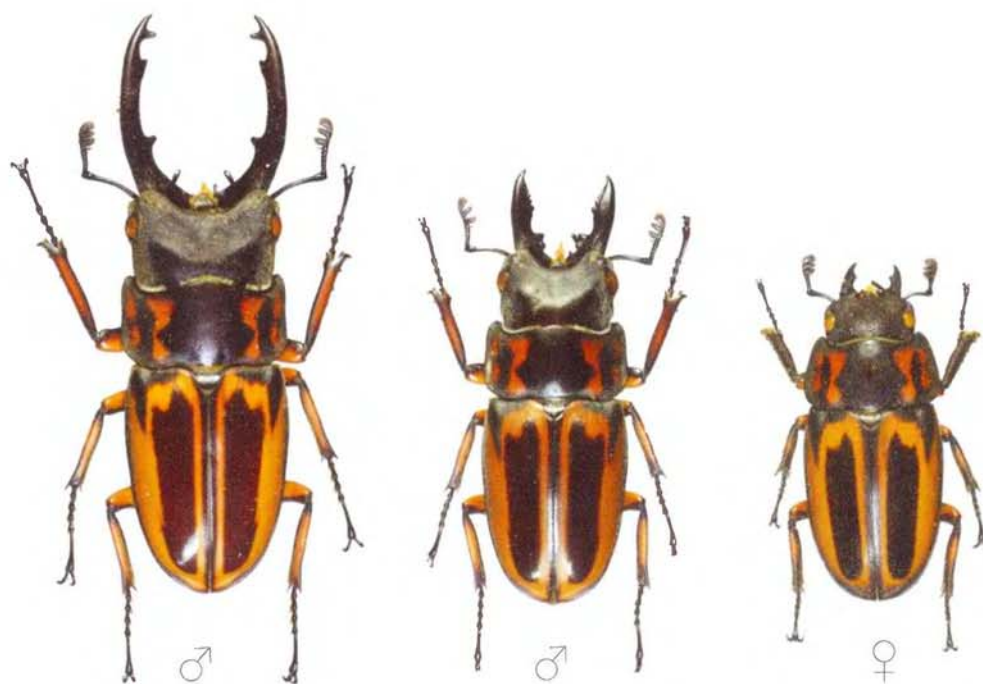
ด้วงคีมมาโครซายเหลือง

Black smooth and shining, with an orange-yellow curved-stripe near the apex of each elytron. **Male**, mandibles in small male are rather short while in large male very long about twice as long as the head; pronotum nearly rounded at lateral margins and hind angles blunt. **Female**, head is small while mandibles are short.

Length male 25-31 mm, female 19-20 mm.

Distribution: India, Thailand (Wiang Pa Pao, Doi Pha Hom Pok, Doi Inthanon).

(1.4 X)



(W. Java. leg. Kawano)
L58. *Prosopocoilus zebra zebra*



(Wiang Pa Pao)



L59. *Macradorcas bisignatus giselae*

L60. *Macrodorcas pseudaxis* (Didier, 1926)

ด้วงคีมมาโครแดง

Small brownish-red species, mandibles in medium to large males are peculiar shaped, each with two intermediate teeth of equal sized, at the apex and the other at the middle or beyond the middle.

Length male 16-32 mm, female 13-19 mm.

Distribution: India, Thailand (Wiang Pa Pao, Doi Pha Hom Pok, Doi Inthanon).

Hemisodorcus (Nipponodorcus) Nomura & Kurosawa, 1960

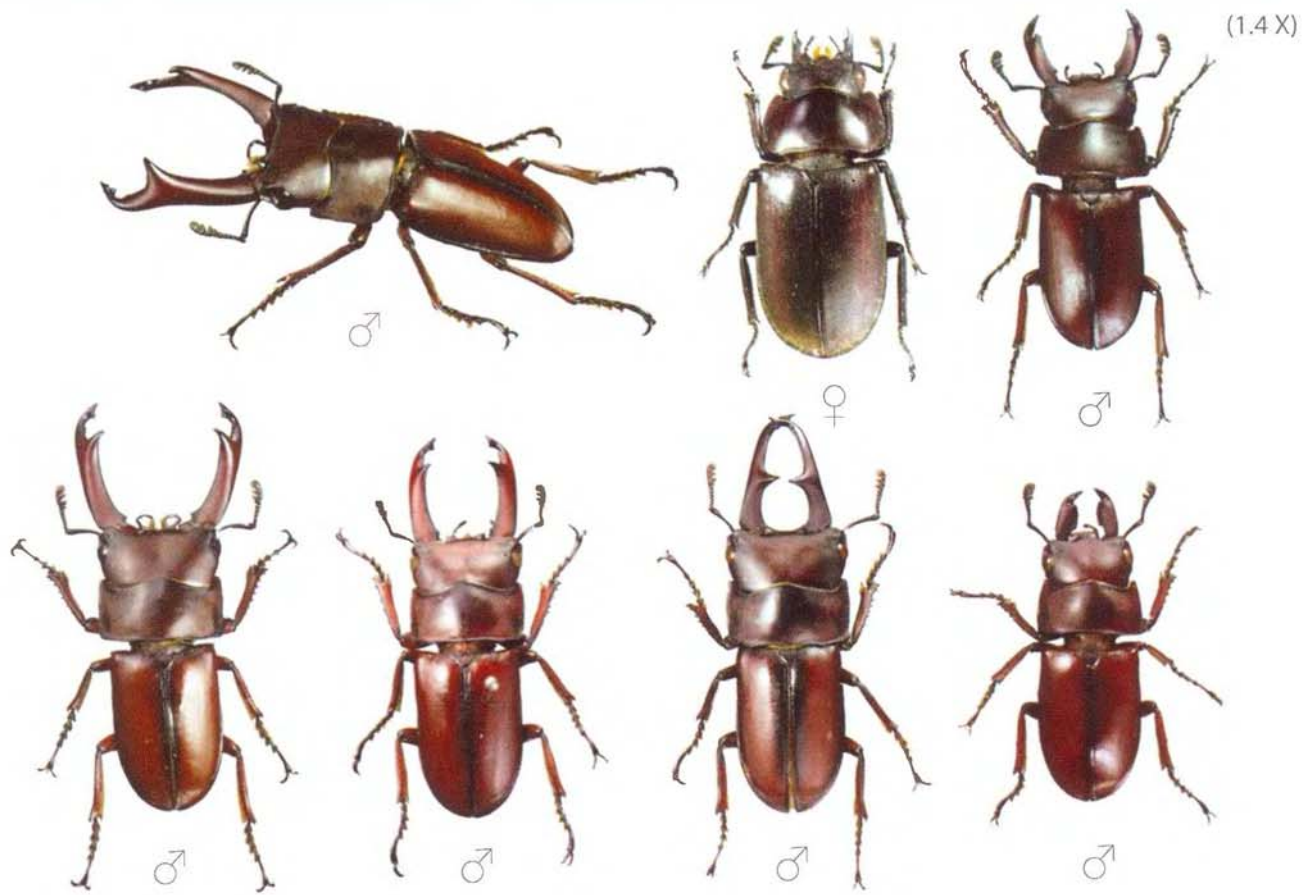
L61. *Hemisodorcus arrowi* Boileau, 1911

ด้วงคีมแดงเขาวง

Black elytra dark blood-red, smooth and shining. **Male**, head bears a pair of short tubercles in front near the base of mandibles; mandibles in large male rather long, curved horizontally inwards, each mandible bearing a sharp tooth near the tip and two to three small teeth in the front and behind it; pronotum with front sharp angles, hind angle rounded. **Female**, similar colored, head bears a pair of short tubercles above the middle in between the eyes.

Length male 40-60 mm, female 15-38 mm.

Distribution: India, Myanmar, Thailand (Doi Inthanon, Doi Pha Hom Pok, Wiang Pa Pao).

L60. *Macrodorcas pseudaxis*L61. *Hemisodorcus arrowi*

Serrognathus Motschulsky, 1861

Eyes are rather small and not completely divided; antennal club composed of three joints; head rather flat at the middle front; pronotum not widest at front margins and abruptly narrow at the base; middle and hind tibiae each with a sharp lateral spine.

L62. ***Serrognathus platymelus platymelus*** (Saunders, 1854)

ด้วงคีมฟันเลื่อยธรรมดา

This species is previously known as a non-valid name, ***Dorcus titanus***. **Male**, mandibles are strongly curved at the outer edge especially near the tips, the basal part strongly curved beyond the basal tooth at the inner edge, immediately followed by serrate teeth and a small tooth near the tip. **Female**, canthus is narrow in front and extending far beyond the middle of the eye; pronotum coarsely margined laterally; elytra fairly finely to moderately punctured above and densely punctured laterally.

Length male 40-86 mm, female 26-44 mm.

Distribution: Myanmar, China, Laos, Vietnam, Thailand (Wiang Pa Pao, Samoeng, Doi Pui, Kanchanburi, Khao Yai).

L63. ***Serrognathus titanus titanus*** (Boisduval, 1835)

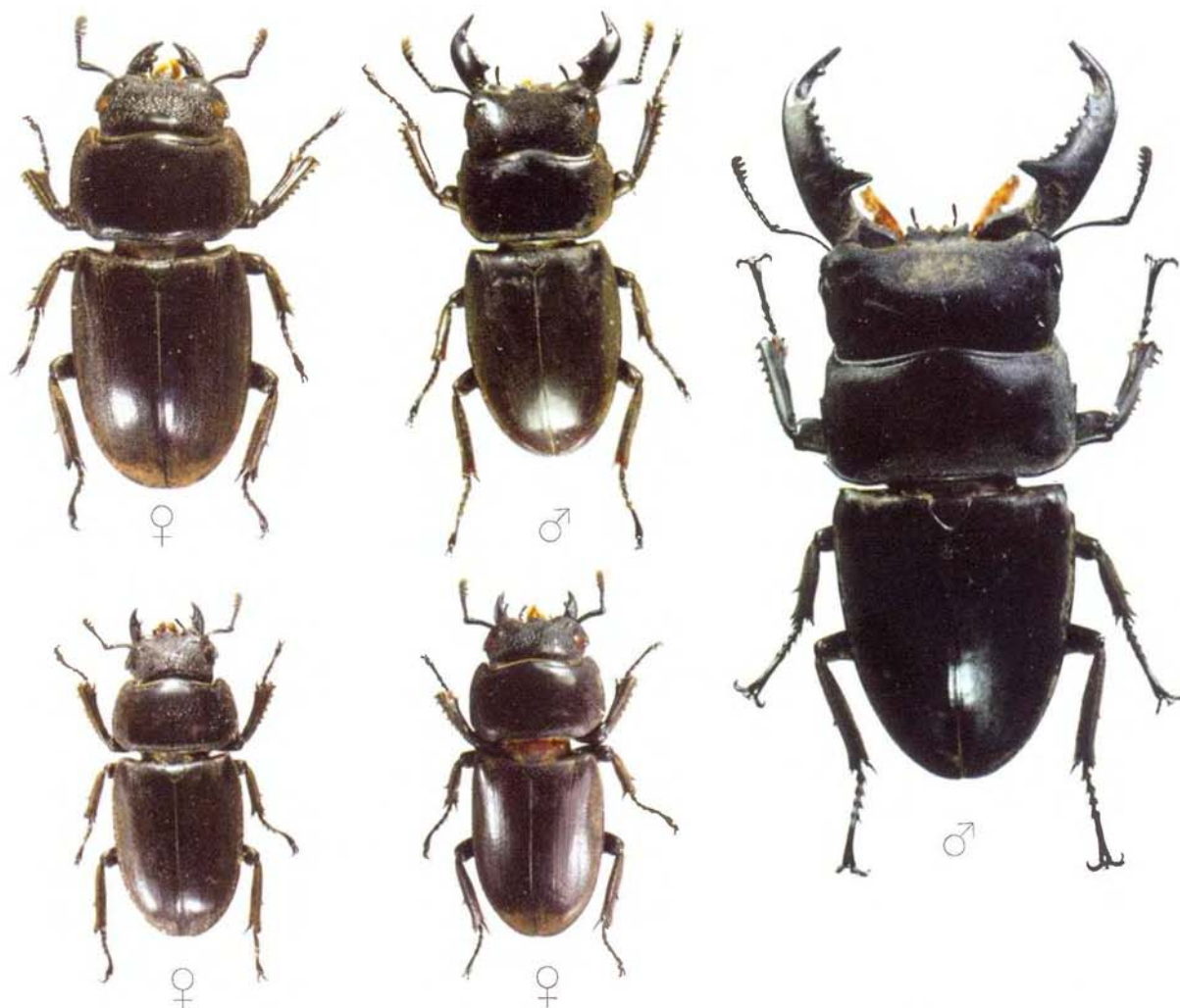
ด้วงคีมฟันเลื่อยใต้

It is very similar to ***Serrogantus p. platymelus***, but each of the pair of clypeal processes are sharply angulated at sides, the outer angle sometimes much higher than the inner side while those of ***S. p. platymelus*** the outer angle very slightly higher than the inner edge; the set of internal serrate teeth of each mandible usually with the first single tooth sharp and pointed forwards instead of square or comprised of more than one teeth together as in ***S. p. platymelus***.

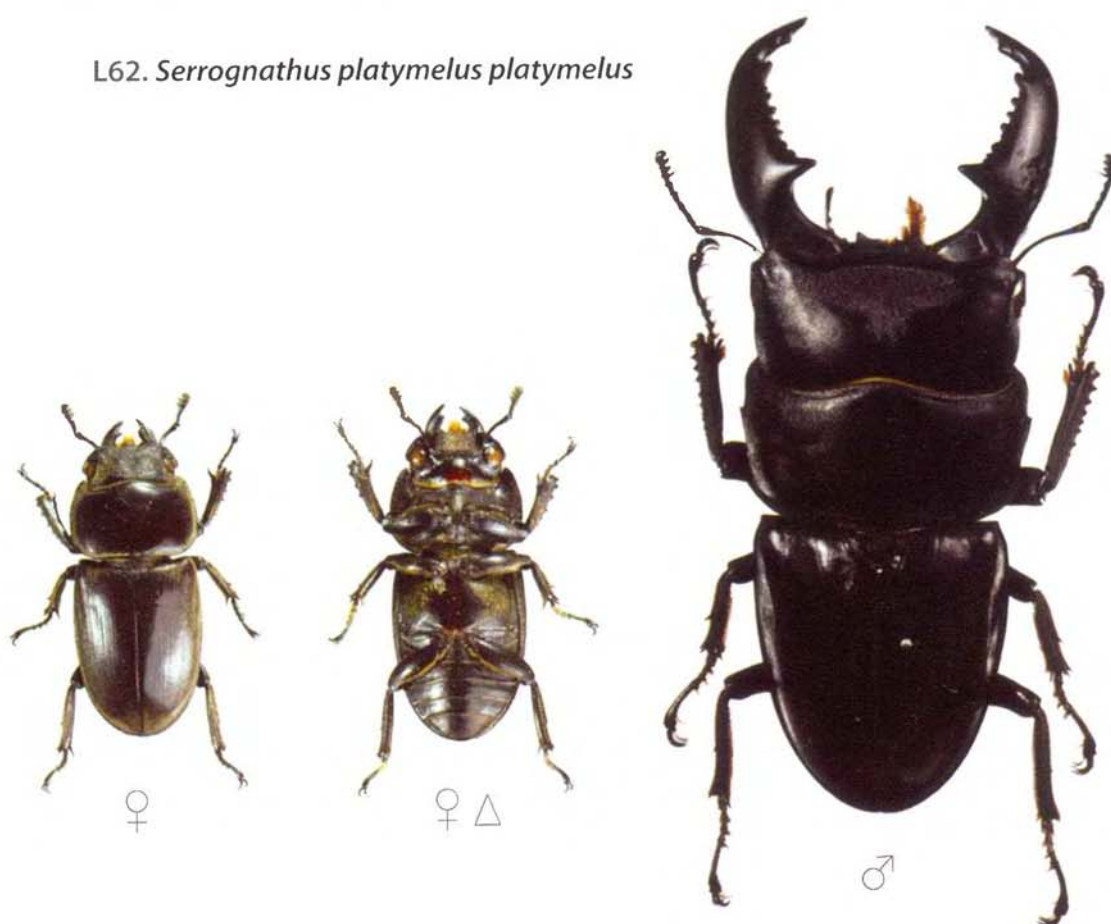
Length male 24-45 mm, female 23-29 mm.

Distribution: Malaysia, Sumatra, Borneo, Sulawesi, Philippines, S. Thailand (Nakhon Si Thammarat, Prachuap Kiri Khan, Trang).

(1.3 X)



L62. *Serrognathus platymelus platymelus*



L63. *Serrognathus titanus titanus*

L64. *Serrognathus lineatopunctatus lineatopunctatus* (Hope, 1831)

ด้วงคีมกระหิิงเขาหยัก

This species used to know as *Dorcus tityus*. **Male** is dark reddish black to black, mandibles strongly curved and each with a small tooth near the tip, pointed obliquely upwards and forwards in small male, mandibles become less curved in large male, each with a broad internal tooth at far beyond the middle and two small teeth near the tip; elytra strongly grooved in small male, but rather smooth and shining in large male. **Female**, canthus is narrow in front and extending far beyond the middle + of the eye; pronotum smooth and shining, slightly depressed in the middle where some punctured forming an oval-shaped marking there, elytra deeply grooved along the twelve costae of each elytron.

Length male 34-67 mm. female 31 mm.

Distribution: India, Nepal, Bangladesh, Myanmar, Vietnam, China, Thailand
(Wiang Pa Pao, Doi Pha Hom Pok, Doi Inthanon).

L65. *Serrognathus reichei reichei* (Hope, 1842)

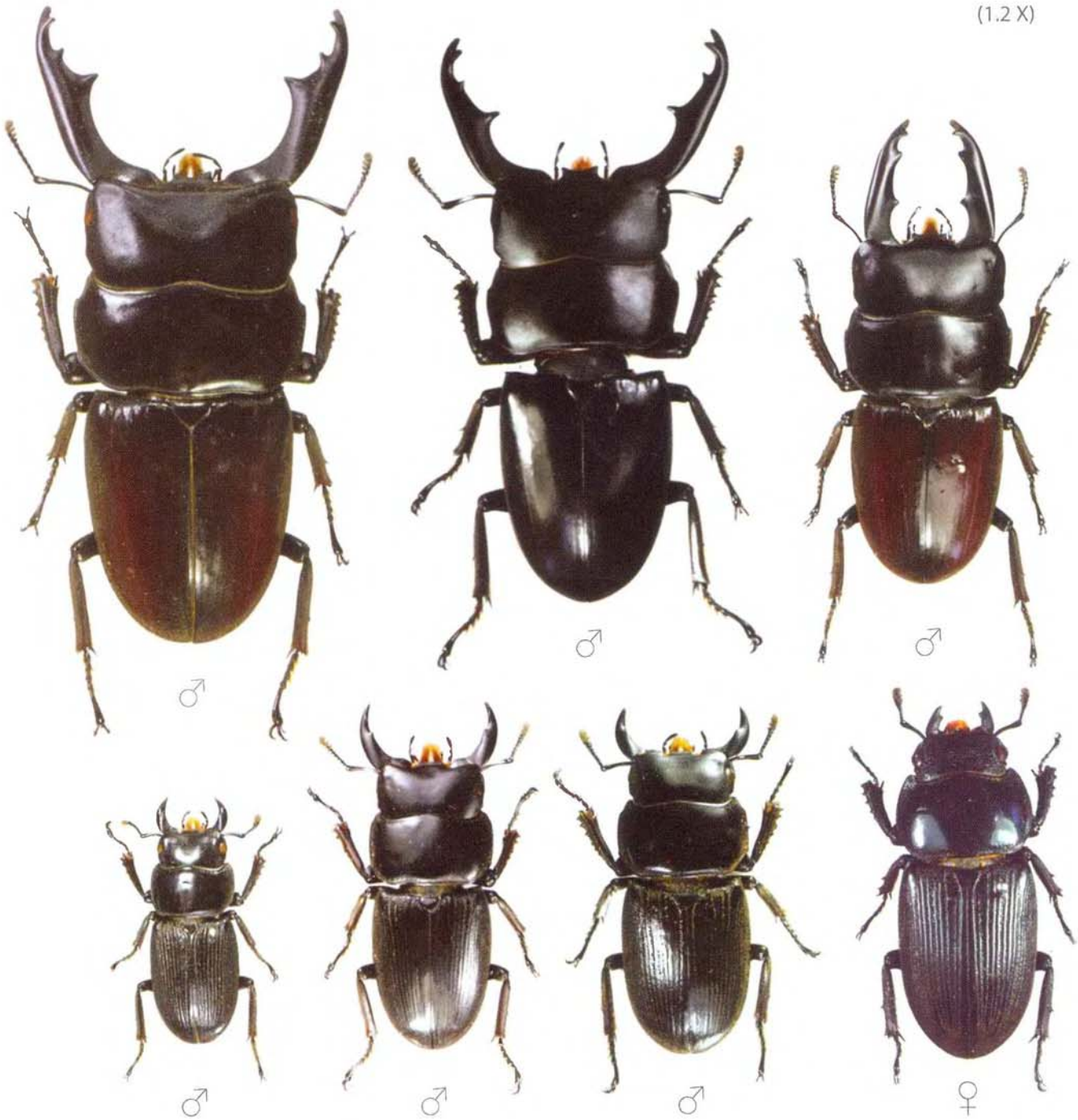
ด้วงคีมไรคี่

Dark reddish black to black. **Male**, mandibles are strongly curved and with a broad erect tooth near the base in small male, but less curved in large male, with a strong internal tooth, forked tip and a small tooth near the tip of each mandible; elytra strongly grooved and punctured in small male, rather smooth and shining in large male. **Female**, canthus is rounded, narrow in front and extending far beyond the middle of the eye; elytra strongly grooved similar to the small male, with about twelve grooves.

Length male 24-45 mm, female 23-29 mm.

Distribution: India, Nepal, Bhutan, Bangladesh, Laos, Vietnam, Thailand
(Wiang Pa Pao, Doi Pui, Doi Pha Hom Pok).

(1.2 X)

L64. *Serrognathus lineatopunctatus lineatopunctatus*L65. *Serrognathus reichei reichei*

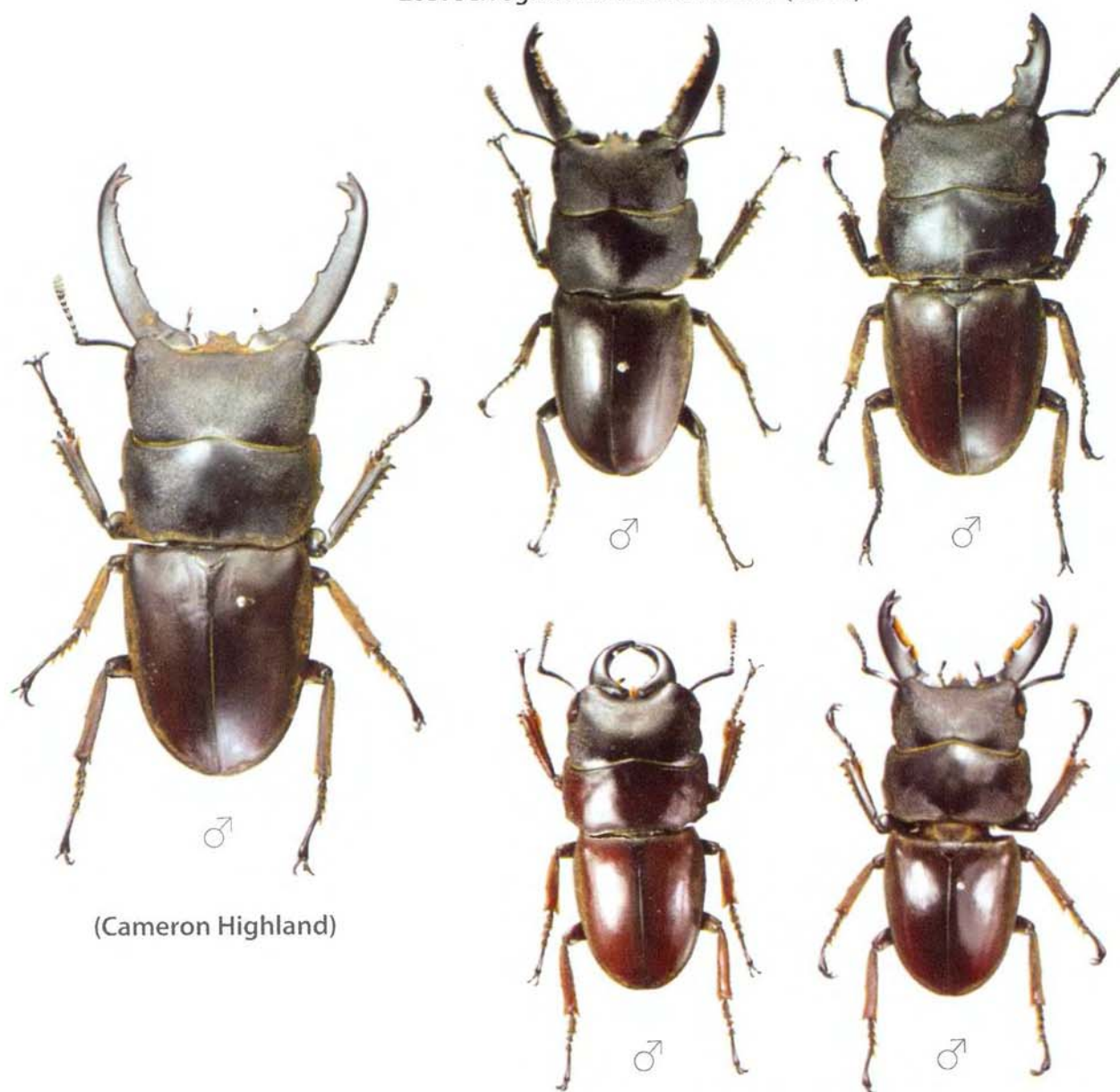
- L66. *Serrognathus taurus* Fabricius, 1801
Serrognathus taurus subtaurus Maes, 1992

ตัวงเค็มขนรองใน

Reddish-brown to black species, with peculiar shaped of mandibles, the inner edge fringed with yellowish brown hairs.

Length male 15-64 mm, female 24-30 mm.

Distribution: Kalimantan, Malaysia, Thailand (Trang, Nakhon Si Thammarat, Kanchanburi).

L65. *Serrognathus reichei reichei* (cont.)

(Cameron Highland)

(Cameron Highland)

L66. *Serrognathus taurus subtaurus*

Dynodorcus Didier, 1931

Eyes are not completely divided, canthus extending to the middle or three-fourth of the eye; mandibles strongly curved inwards at front and with a strong erect tooth near the base or close to the middle of each mandible; pronotum not widest at the front margin and abruptly narrowed at the base.

L67. ***Dynodorcus antaeus*** (Hope, 1842)

ด้วงคีมกระตังดำใหญ่

Male is black, head without a pair of tubercles in front; mandibles broad, strongly curved and each with a strong erect tooth at the middle edge; elytra smooth and shining, sub-parallel-sided and rounded at apices. **Female**, canthus is narrow in front and extending to the middle of the eye; pronotum coarsely ridged and rounded laterally; elytra fairly finely punctured and shining.

Length male 40-80 mm, female 33-40 mm.

Distribution: India, Bhutan, Nepal, Myanmar, Vietnam, China, Malaysia, Thailand (Wiang Pa Pao, Doi Pui, Doi Pha Hom Pok).

L68. ***Dynodorcus curvidens*** (Hope, 1840)

ด้วงคีมเคอร์วีเดนส์

Male, entirely black, broad in front and rather slim behind; head bears a pair of small tubercles at front; mandibles strongly curved, each with a strong erect tooth in the middle and a small tooth near the tip in large male, but the erect tooth is closer to the base than the middle, the small tooth near the tip absent in the small male; elytra with punctured dot-lines, clearly seen along the lateral margins in small male, but rather smooth and with fairly finely punctured in large male. **Female**, canthus is rounded in front and extending to about three-fourth of each eye; elytra deeply grooved longitudinally, except the 2nd, 5th and 8th are strongly punctured, about twelve grooves. Mandibles in large male of subspecies ***volscens*** are not as broad as that of ***curvidens***.

Length male 30-75 mm, female 30-40 mm.

L68a. ***Dynodorcus curvidens curvidens*** (Hope, 1840)

ด้วงคีมเคอร์วีเดนส์

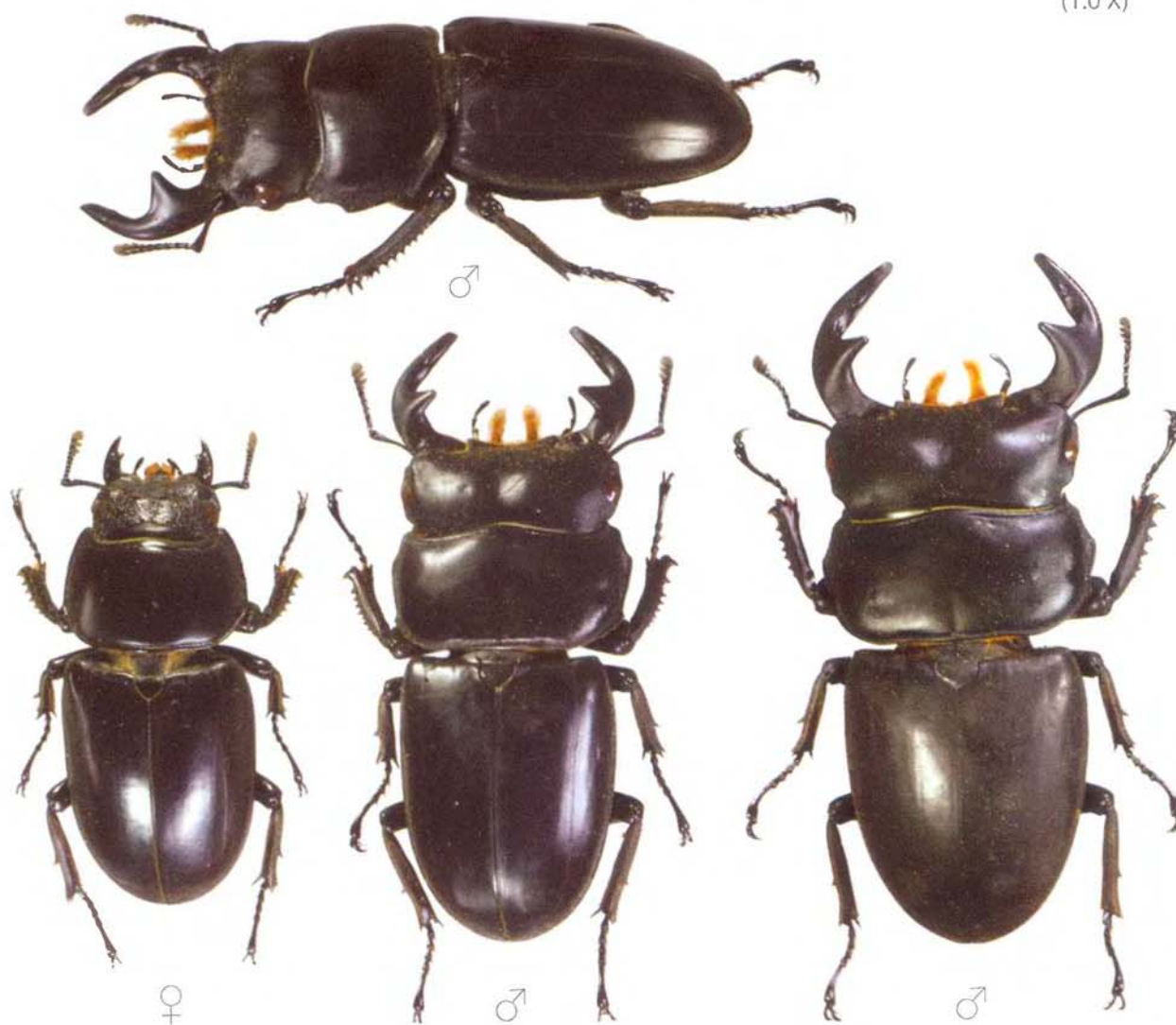
Distribution: India, Bhutan, Bangladesh, Myanmar, Vietnam, Thailand (Wiang Pa Pao, Doi Pui, Doi Inthanon).

L68b. ***Dynodorcus curvidens volscens*** (Didier & Séguy, 1952)

ด้วงคีมเคอร์วีเดนส์เรียว

Distribution: Malaysia, Sumatra, Kalimantan, Thailand (Khao Yai, Kanchanaburi).

(1.0 X)



L67. *Dynodorcus antaeus*



L68a. *Dynodorcus curvidens curvidens*

Dorcus Mac Leay, 1819

L69. **Dorcus gracilicornis** Benesh, 1950

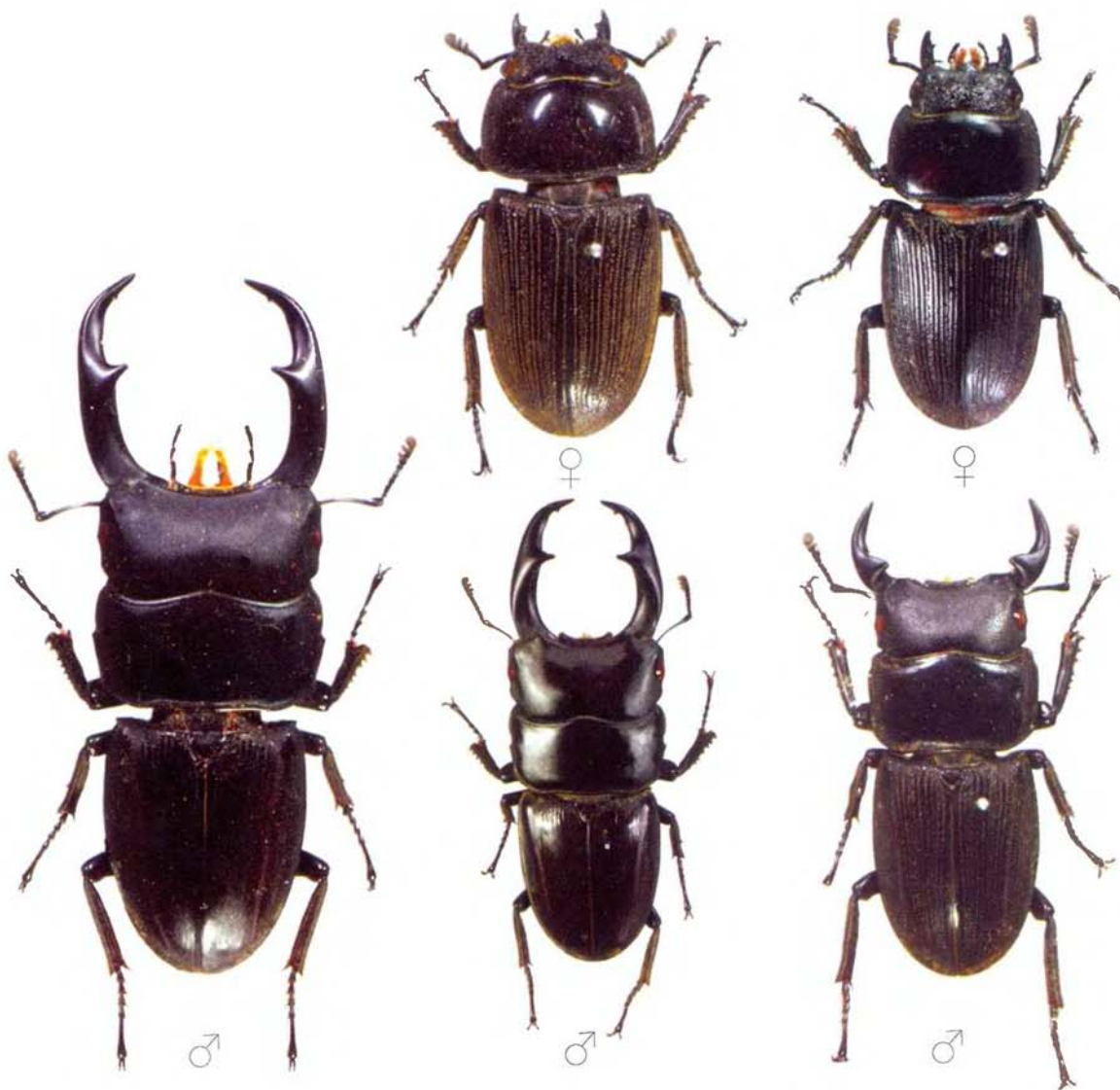
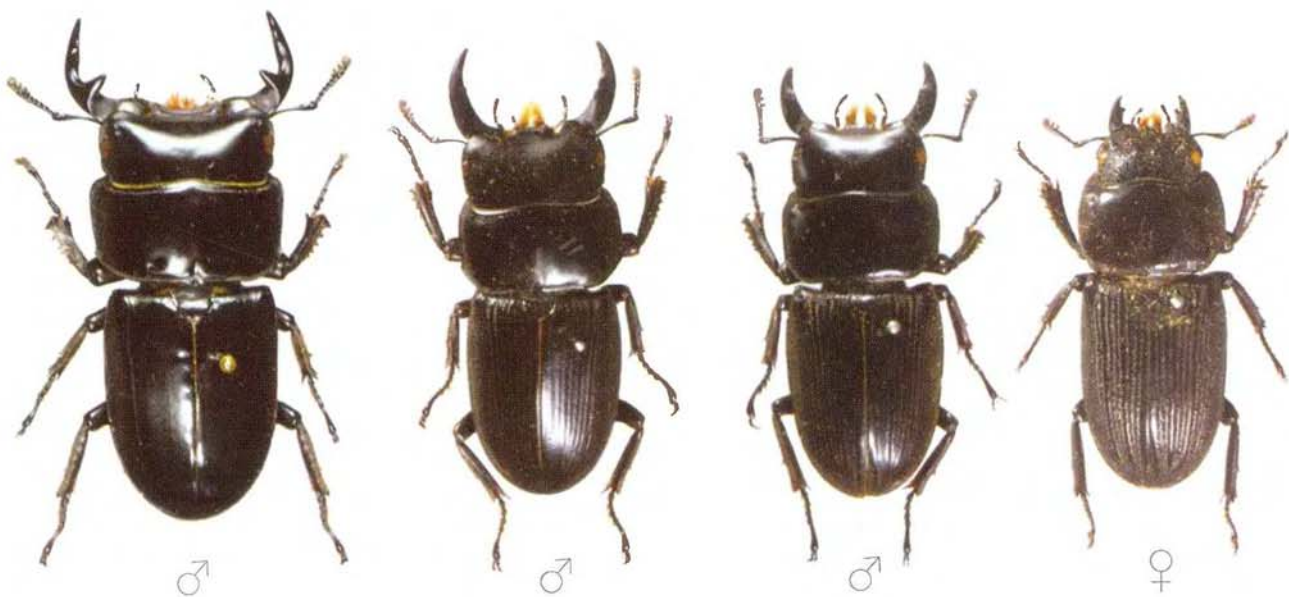
ด้วงคีมกระหังดำเล็ก

Small black, narrowly elongate, smooth and shining. **Male**, head without a pair of tubercles at front; mandibles are strongly curved with a strong erect tooth near the base and a small tooth near each tip in large male. Differs from *D. antaeus* in smaller in sized; head with moderately punctures around the eyes; front angles of pronotum moderately punctured; elytra with fairly finely punctured dot-lines, but shining while the latter is larger in sized (40-80 mm); areas at front angles of pronotum and elytra are smooth and fairly finely punctured. **Female** is long and slender, head with a pair of short tubercles above the middle between the eyes; canthus narrow and extending to the middle of each eye; elytra with some trace of punctured dot-lines, but shining.

Length male 29-38 mm, female 23 mm.

Distribution: Taiwan, Vietnam, India, Thailand (Wiang Pa Pao, Doi Inthanon).

(1.1 X)

L68b. *Dynodorcus curvidens volszens*L69. *Dorcus gracilicornis*

Velutinodorcus Maes, 1992

- L70. **Velutinodorcus velutinus** (Thomson, 1862)

ด้วงคีมสีดินแห้ง

Black, thickly clothed with pale brown or grayish-brown pubescence, elongate shaped. **Male**, head is short; mandibles in large male forked at tips, curved slightly inwards and pointed towards each other, in small male rather short and not forked at tips. Pronotum is rather square. Elytra, each bears five rows of continuous setae. **Female**, mandibles are very short and small, each with a tooth at the inner edge near the tip.

Length male 19-25 mm, female 18-21 mm.

Distribution: India, Bhutan, Nepal, Myanmar, Vietnam, Laos, Thailand (Wiang Pa Pao, Doi Pha Hom Pok).

Aegus Mac Leay, 1819

Eyes not extremely small and completely divided; antennal club composed of three joints, male and female dissimilar.

- L71. **Aegus amplus** Nagai, 1994

ด้วงคีมร่องเพิ่ม

Male, dark reddish black to black, rather shining; head is broad, depressed in the middle front, with a pair of sharp tubercles above near the front angles and with another smaller pair of tubercles at lower front. Mandibles are compressed vertically, bearing a pair of basal teeth and a pair of internal teeth. Pronotum is square, smooth and shining. Elytra are deeply parallel-grooved, six grooves, shining above.

Length 39-41 mm.

Distribution: Myanmar, Laos, Thailand (Wiang Pa Pao, Doi Inthanon, Doi Pui).

- L72. **Aegus chelifer chelifer** (MacLeay, 1819)

ด้วงคีมร่องเก่า

Male, head bears a pair of tubercles in the middle front; lateral margins behind the eyes rounded; mandibles strongly curved horizontally, with a blunt basal tooth and a sharp middle tooth at the inner edge; pronotum slight shining; elytra deeply grooved longitudinally, rather shining. **Female** is oval shaped; head and pronotum strongly rugosely punctured; mandible bearing a pair of small teeth near the middle edge; elytra closely sculptured and dull.

Length male 25-37 mm, female 20 mm.

Distribution: India, Bangladesh, Myanmar, Laos, Cambodia, Vietnam, Thailand (Wiang Pa Pao, Chiang Dao, Hang Dong, Bangkok).



(1.7 X)



♂



♂



♀



♀

(Wiang Pa Pao)

(Doi Inthanon)

(Wiang Pa Pao)

L70. *Velutinodorcus velutinus*

(1.4 X)



♂



♂



♀



♀

(Doi Inthanon)

(Wiang Pa Pao)

L71. *Aegus amplus*

♂



♂



♀



♀

(Chiang Dao)

(Samoeng)

(Chiang Dao)

L72. *Aegus chelififer chelififer*

L73. *Aegus parallelus* (Hope & Westwood, 1845)

ด้วงคีมร่อนขนานใหญ่

This is big black species. **Male** resembles to *A. amplus*, but the mandibles are more curved, the V-shaped of the front of head is more open and better characteristic. **Female**, left mandible has two teeth instead of one in that of *A. amplus*.

Length male 21-54 mm, female 22-29 mm.

Distribution: Myanmar, Malaysia, Kalimantan, Sumatra, Java, Thailand (Chiang Mai, Kanchanaburi).

(1.8 X)



♂



♂△



♂

L73. *Aegus parallelus*

FAMILY PASSALIDAE

There are some common names used for the members of this family, such as "bess beetles, betsies, patent-leathers or passalids". They mostly are black or reddish-brown, shining with rather flattened body and deep grooves on elytra. The family is closely related to Lucanidae, but the antennae of the latter are geniculate while those of passalids are curved clavate type.

The first antennal segment is not very long and the following segments connected each other curvily inwards. Both sexes are similar. This family is small, with the word species of around 500 species. The only 6 species have been illustrated in this book. Thailand species probably are about 10-20 species.

Adults and larvae usually live together under the rotten tree barks or decaying logs. They communicate among each other also by means of sound producing by rubbing their hind-wing against the abdomen. The adults secrete saliva to mix with the food of rotten log to feed the larvae. The beetles are considered very useful for the ecology of tropical rain-forests in breaking down the timber and death trees.



Figure 18. Adults of passalids; 1. *Tiberioides borealis*, 2. *Aceraius grandis*.

Aceraius Kaup, 1868

- P1. ***Aceraius grandis*** (Burmeister, 1847)

ด้วงเขี้ยวสันยักษ์

Very large, reddish black to black, with the sides of pronotum, sides of elytra especially the front half, middle and hind tibiae thickly clothed with golden-brown hairs; head closely punctured, the supra-orbital ridges with two blunt processes at outer margins, two sharply pointed processes at inner margins, the left one long, pointed inwards, the right one short triangular-shaped. Pronotum bears a median groove, rather smooth and shining, strongly punctured at sides. Elytra are deeply grooved and the grooves are unpunctured, the outmost intervals densely punctured.

Length 33-49 mm.

Distribution: India, Myanmar, Malaysia, Indonesia, Thailand (Wiang Pa Pao, Phu Khieo, Khao Yai).

Ceracupes Kaup, 1871

- P2. ***Ceracupes fronticornis*** (Westwood, 1842)

ด้วงเขี้ยวสันหน้าไม้

Cylindrical black, very smooth and shining; head bears a median horn projection obliquely forwards and upwards, slightly dilated near the end, bifurcated in front; mandibles with erect frontal processes more or less the same length as the median horn; pronotum with strong marginal grooves and a median groove; elytra very long and deeply grooved, containing series of strong punctured inside the grooves. Antennal club bears three lamellae.

Length 22-25 mm.

Distribution: India to N. Thailand (Wiang Pa Pao).

(1.2 X)

P1. *Aceraius grandis*

(1.5 X)

P2. *Ceracupes fronticornis*

Leptaulax Kaup, 1868

P3. ***Leptaulax cyclotaenius*** Kuwert, 1891

ด้วงเขี้ยวสั้นจิ๋ว

Very small, dark brown or black, rather flat, the middle area of metasternum distinctly punctured. Head is strongly punctured, the front margin with four equidistant teeth and an additional smaller one in the middle. Pronotum bears a median groove, strongly rugosely punctured at sides. Elytra are very strongly grooved and strongly punctured inside the grooves, the lateral grooves forming ladder-like pattern. Antennal club bears 3 lamellae.

Length 15-23 mm.

Distribution: India, Myanmar, Malaysia, Sumatra, Kalimantan, Celebes, Thailand (Nakhon Sawan, Bangkok).

P4. ***Leptaulax dentatus*** (Fabricius, 1792)

ด้วงเขี้ยวสั้นแบน

Black, small to medium size and flat, metasternum closely and rugosely punctured, except the middle part, smooth and unpunctured, head with large annular punctured, bearing four equal and nearly equidistant teeth in a transverse line. Pronotum is square, with a median groove, smooth and shining, except the sides rugosely punctured at a certain area behind the front angle. Elytra are very strongly grooved, the lateral grooves forming ladder-like pattern, rather tapered at apical end. Antennal club bears 3-lamellae.

Length 25-35 mm.

Distribution: India, Myanmar, Malaysia, Kalimantan, Java, Philippines, New Guinea, Thailand (Phu Khieo, Wiang Pa Pao).

(1.5 X)

P3. *Leptaulax cyclotaenius*P4. *Leptaulax dentatus*

Tiberioides Gravely, 1913

P5. *Tiberioides borealis* (Arrow, 1906)

ด้วงเขี้ยวสันสมดุล

Black, very smooth, elytra rather narrow at the shoulders, which are rather sharp, strongly rounded beyond the middle. Head is symmetrical, slightly rugose, the two marginal processes broadly triangular and sharply pointed. Pronotum bears a faint median groove. Elytra are strongly grooved, with very fine punctured inside the grooves, not forming ladder-like pattern at sides. Antennal club is composed of three long and three short lamellae.

Length 28-39 mm.

Distribution: Assam to N. Thailand (Wiang Pa Pao, Doi Inthanon).

P6. *Tiberioides kuwerti* (Arrow, 1906)

ด้วงเขี้ยวสันบันได

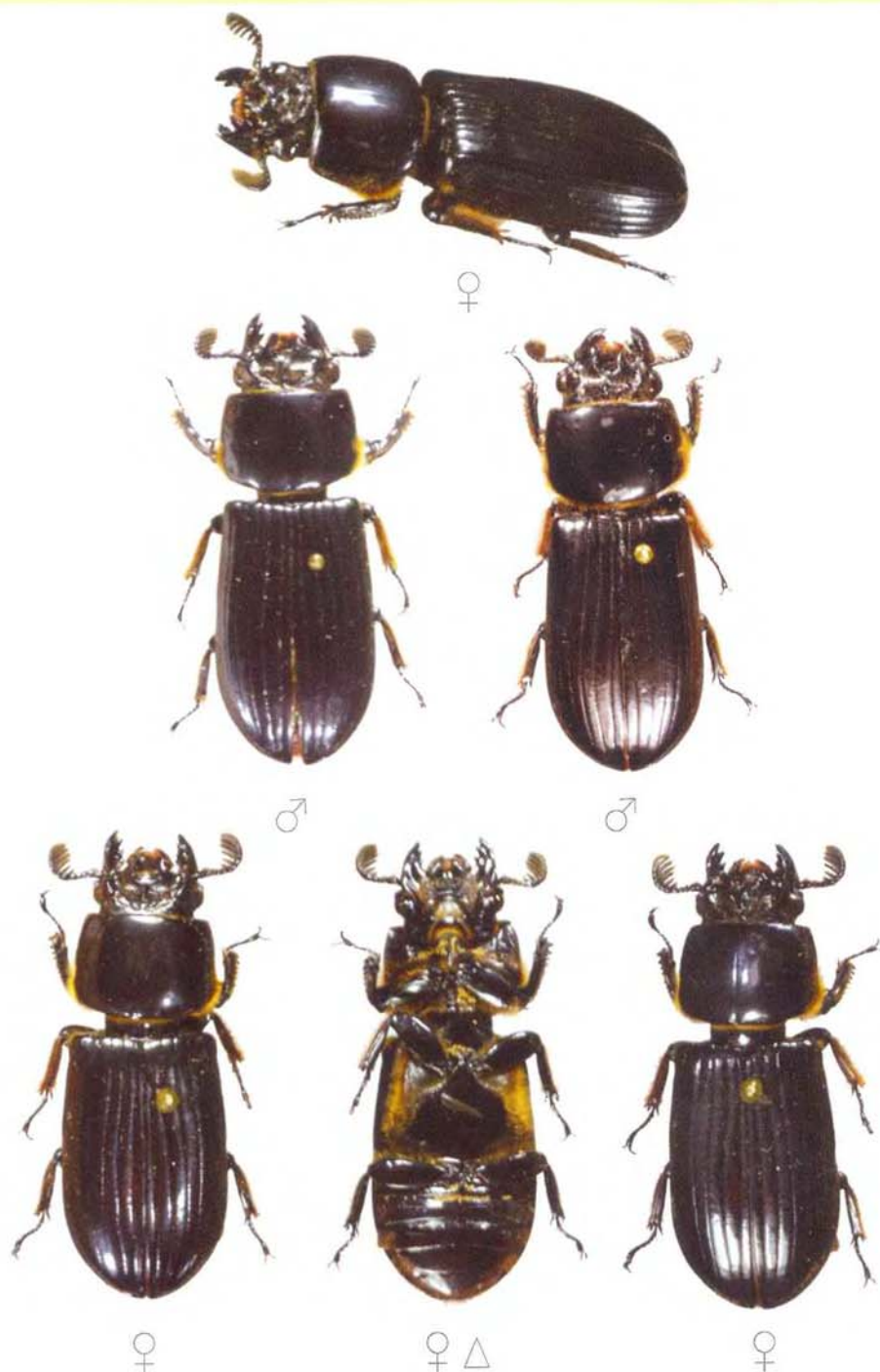
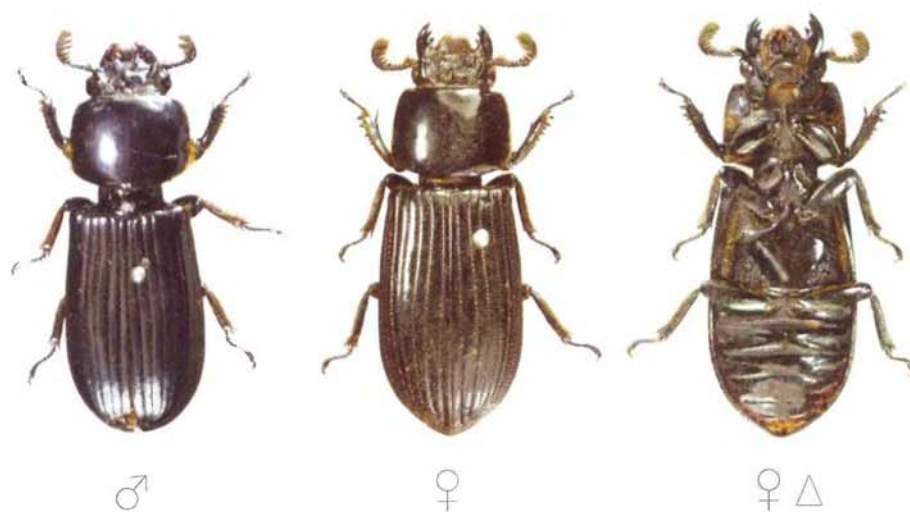
Black moderately elongate, rather convex, without hair groove above; head symmetrical, the supra-orbital ridges rounded above, the two marginal processes triangular, similar shaped and sized. Pronotum is smooth and shining, without a median groove. Elytra are not very long, rounded and dilated behind, strongly and deeply grooved, with the ladder-like pattern at sides. Antennal club is composed of three long and three short lamellae.

Length 29-32 mm.

Distribution: India, Myanmar, N. Thailand (Wiang Pa Pao, Chiang Dao).



(1.3 X)

P5. *Tiberioides borealis*P6. *Tiberioides kuwertii*

FAMILY SCARABAEIDAE

The Superfamily SCARABAEOIDEA, sometimes is known as LAMELLICORNIA. Three families which belong to this Superfamily are Scarabaeidae, Lucanidae and Passalidae. The chief character, as the name LAMELLICORNIA has been implied, is the lamellate type of antennae. In the Family Scarabaeidae the antennal club are united into close contact as a compact ball, while those of the Family Lucanidae and Passalidae are less so. Anyhow, the last three or six segments of the antennal club of some passalids are brought closely together by partial rolling up of antennae.

Scarabaeidae (scarab beetles) is the largest of all beetles families with about 26,000 world species. The members of the family are very variable in size. It consists of many beetles which are amongst the world largest species, such as the elephant beetles and the hercules beetles of the southern U.S.A. and the goliathus beetles of Africa. The largest beetles in South East Asia and in Thailand, the black three-horned beetles, *Chalcosoma caucasus* and *Chalcosoma atlas* are also the members of this family.

Represented by seven subfamilies, totally 140 species are illustrated in this book. They are, Dynastinae 17, Euchirinae 2, Copriinae 20, Geotrupinae 1, Melolonthinae 2, Rutelinae 16 and Cetoniinae 82 species.

FAMILY SCARABAEIDAE

SUBFAMILY DYNASTINAE

129

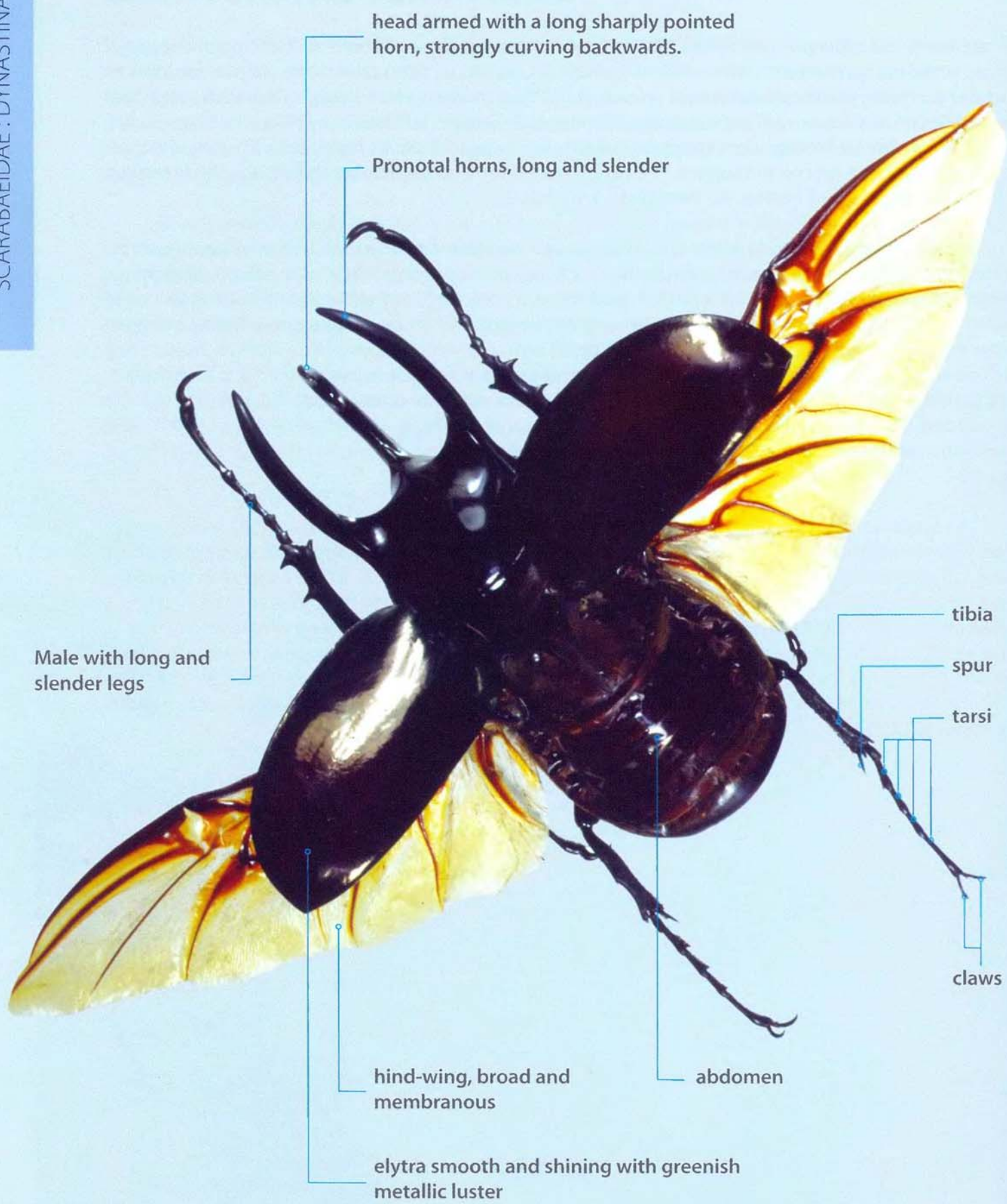
Beetles of Thailand



The beetles in this subfamily mostly black or dark reddish brown, rather smooth and shining above especially in male. Many members of this subfamily show strong sexual dimorphism, not only in the form of head and thoracic growth, but also in size, color, body surface coating or furnishing with or without pubescence. Males usually adorn with great developed horns while females without horns. The world species are about 1,000. There were 46 species recorded for the Indian region. However, I have only 17 species including the popular large species in Thailand, five-horns, three-horns, rhinoceros beetles, the fighting beetles and the Japanese-horned beetles, for examples, in this book.

The life histories of the members of Dynastinae are very little known except some common species which are of economic importance to agriculture, such as the black coconut beetles or rhinoceros beetles, *Oryctes rhinoceros*. It is an important pest of coconuts and palms in Thailand. Beetles of both sexes prefer feeding on the terminal point of coconut plants mostly at night. The females sometimes laying her eggs on the damaging and decaying parts which will be an entrance deeply downwards into the trunk. They are nocturnal which hide themselves under the ground during the daytime. Larvae feed inside the dying plant and also on rotten stumps of coconut, young roots and organic matters under the ground. Eggs are rounded about 3-4 mm in diameter and hatch in 7-8 days. Larvae are typical scarabaeiform type that live for 3-4 months, pupal stage about 1 month and adults live about 3 months. They usually have 2-3 generations a year.

The larvae of the yellow five-horned beetles, *Eupatorus gracilicornis*, typical scarabaeiform, with broad yellowish body, were recently found in the north of Thailand. The body surface is covered by short brown spines and some scattered long brown hairs. Head is black and rounded, with a pair of strong mandibles. Thorax bears three pairs of moderately long legs. There are nine pairs of spiracles at sides of prothorax and other eight in the first eight segments of abdomens. The larvae found feeding on decaying wood in damp places in the forest. Its larval stage lasts very long depending on the environmental conditions which may take as long as 1-2 years in unsuitable conditions. The fully-grown larva is about 10 cm long, the head capsule width is 14-15 mm, the body weight is about 50-60 g. Beetles often seen on wings once a year in September to October.



head armed with a long sharply pointed horn, strongly curving backwards.

Pronotal horns, long and slender

Male with long and slender legs

tibia

spur

tarsi

claws

hind-wing, broad and membranous

abdomen

elytra smooth and shining with greenish metallic luster

Figure 19. *Chalcosoma atlas*, male. Dorsal view with opened wings.

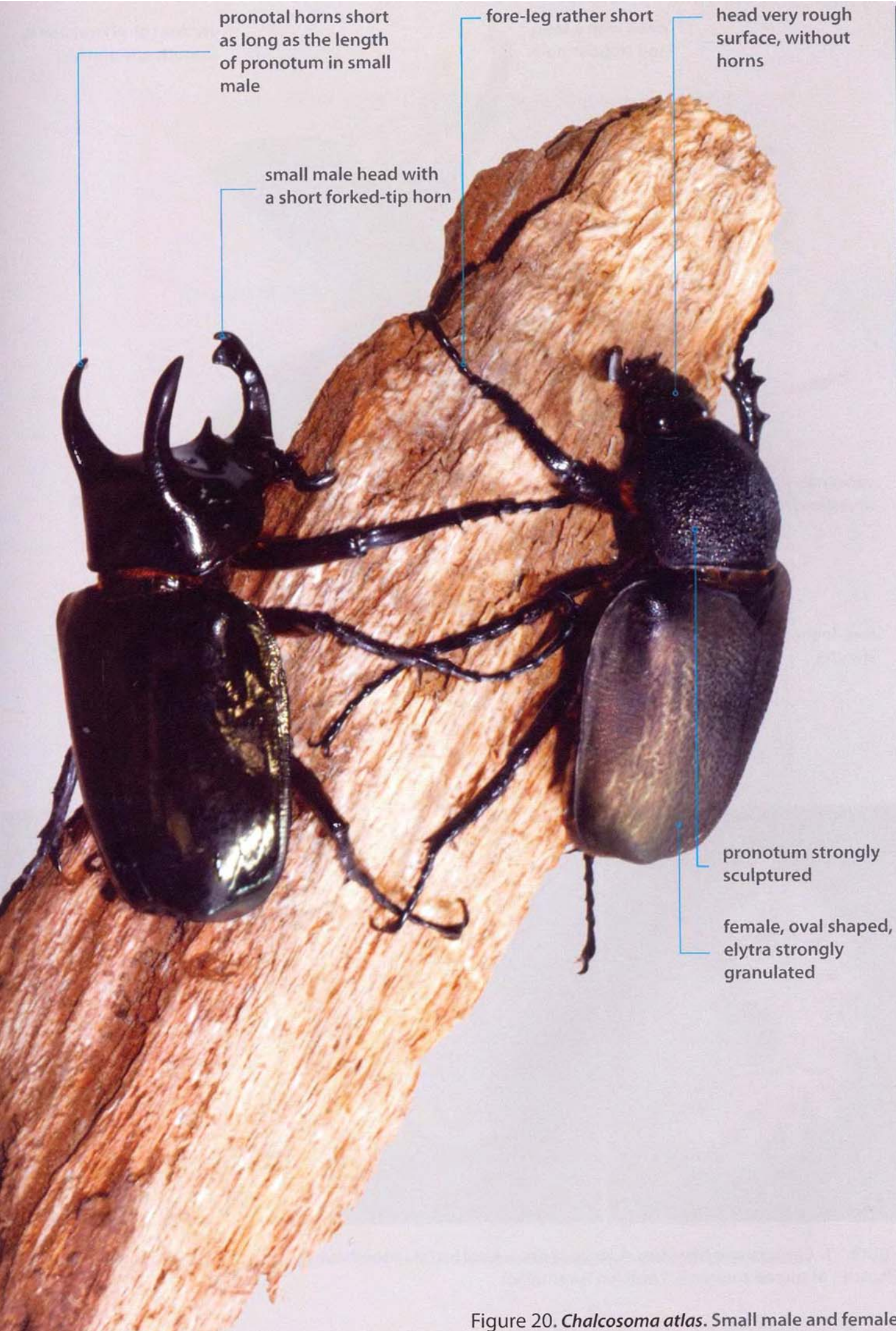
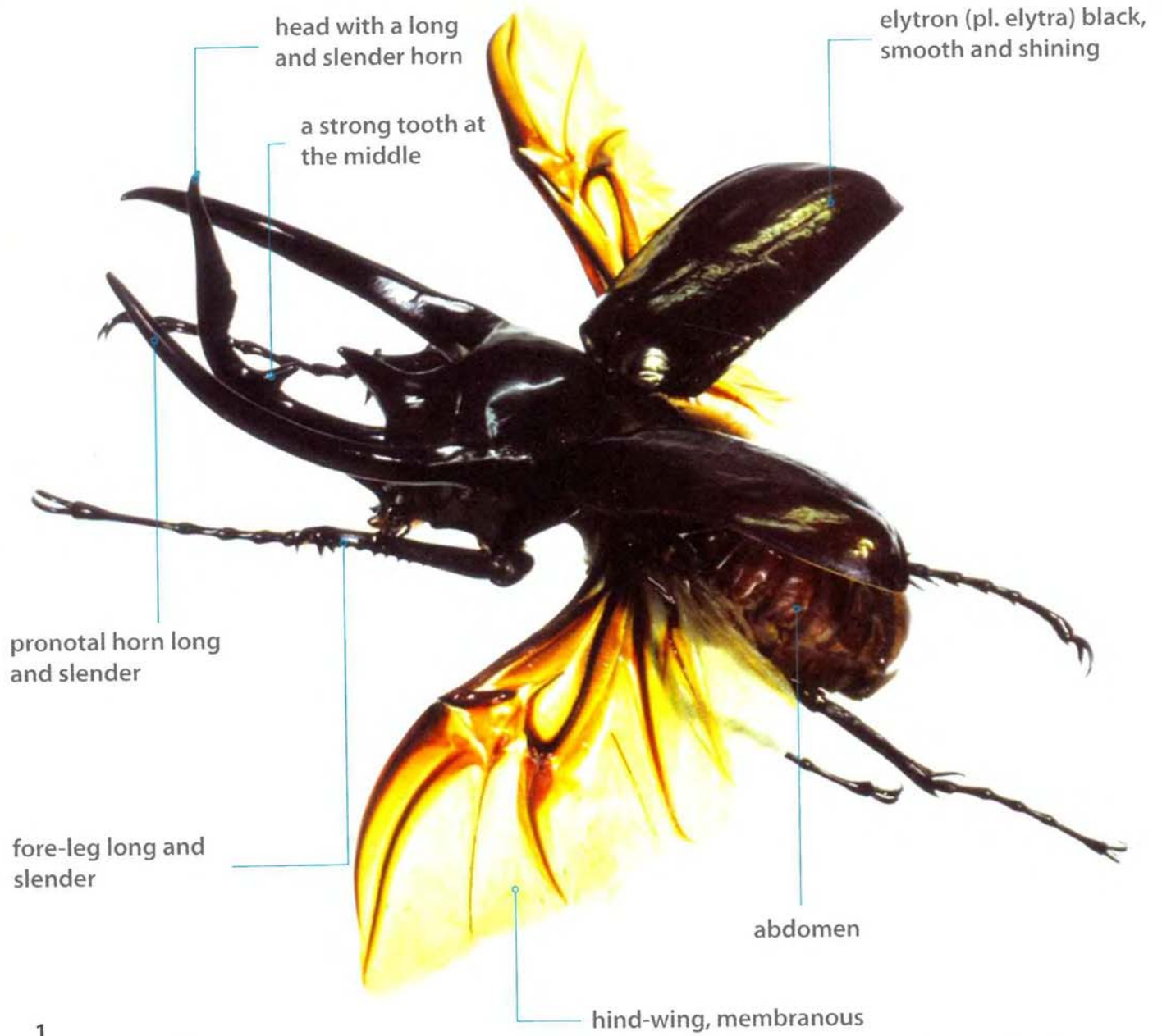


Figure 20. *Chalcosoma atlas*. Small male and female.



1



2



3



4

Figure 21. *Chalcosoma Caucasus*. 1. large male, 2. final instar larva, 3. newly pupated pupa, 4. mature pupa. (Photos of pupae source: K. Lerdchai Kwantalae).

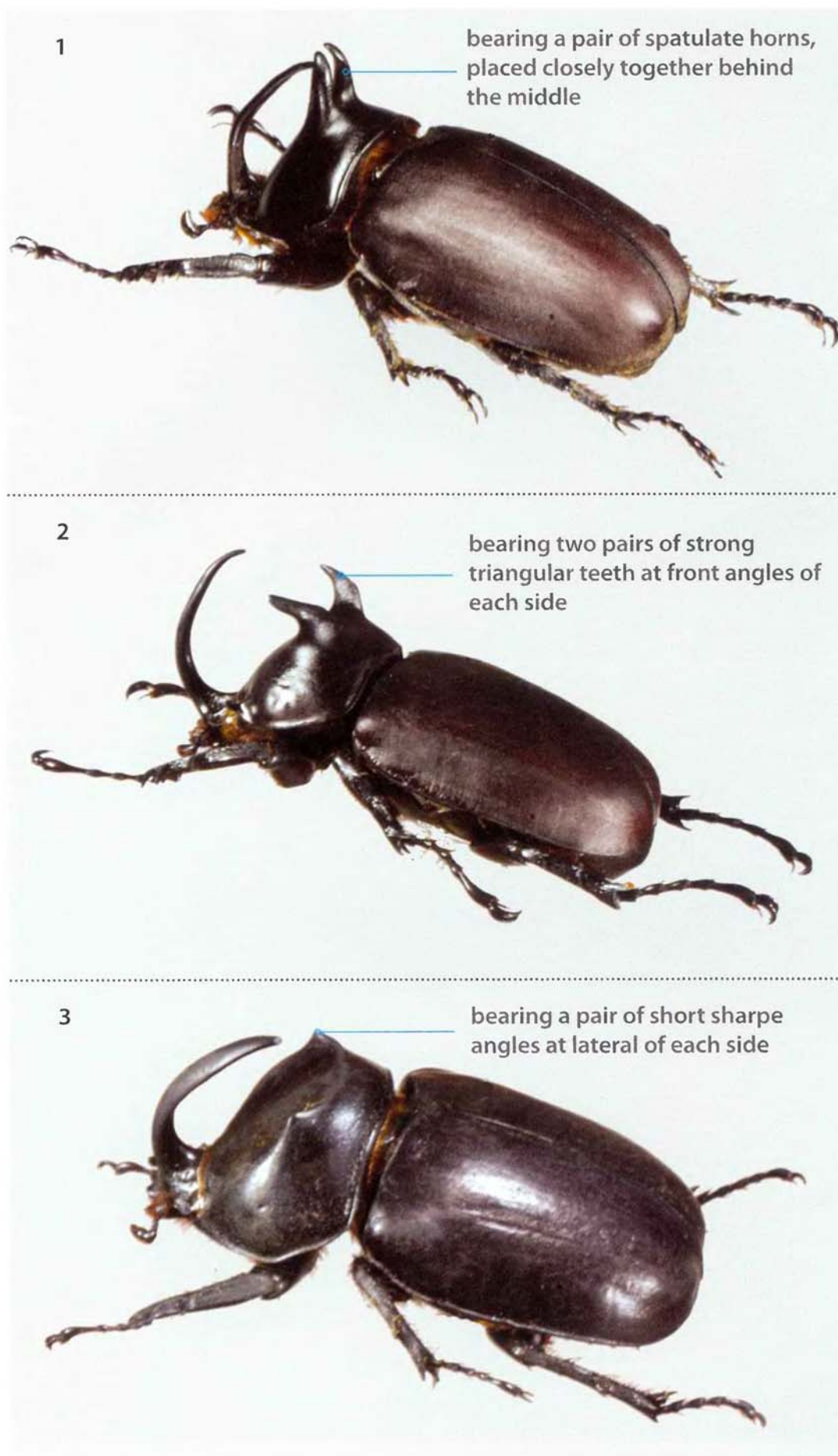


Figure 22. 1. *Eupatorus birmanicus*, 2. *Eupatorus siamensis*, 3. *Pachyoryctes solidus*.



Figure 23. *Eupatorus gracilicornis*, 1. young larva, 2. final instar larva, 3. small male and female on copulating at early morning.



Figure 24. *Trypoxylus dichotomus politus*, 1. a large pupa, 2. the pupa almost in vertical position inside the pupal chamber, 3. male and female.



Figure 25. *Oryctes rhinoceros*, 1. male and female 2. the final instar larva, 3. the side view of a pupa.

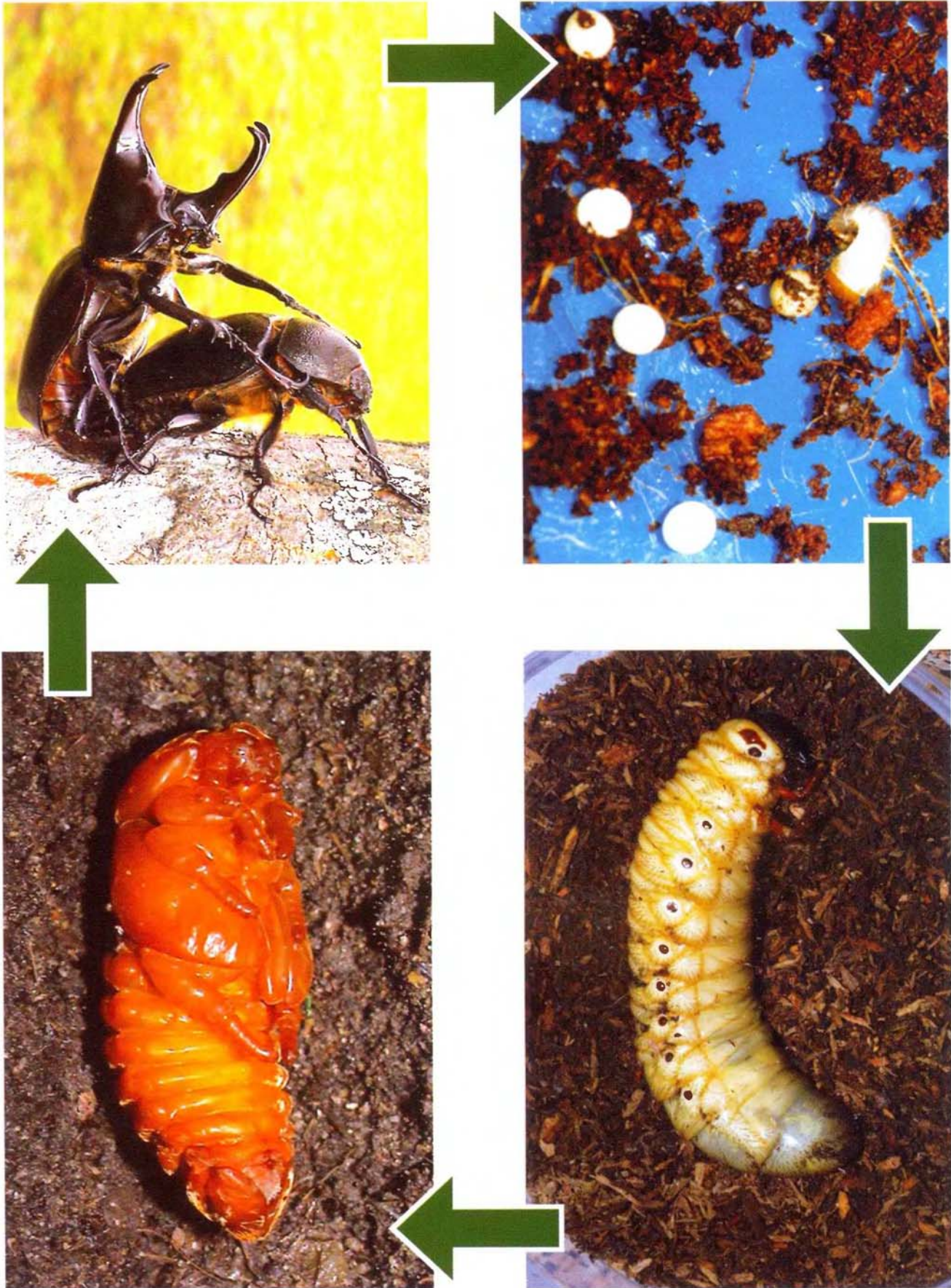


Figure 26. A life-cycle of *Xylotrupes gideon*, 1. Adult, generally lasts for 2-3 months. However, with good food and care the female may last for 6 months while the male has a shorter life, 2. eggs 1 month, 3. larva 6-7 months, 4. pupa 1 month.

S1. ***Blabephorus pinguis*** Fairmaire, 1898

ด้วงแรดดอกแก้ว กว้างต้อ

Reddish brown, body short and strong concave above, with short brownish-yellow hairs beneath. **Male**, head armed with a short, strongly curved horn; pronotum broadly excavated at the middle; front tibia with four teeth. **Female**, head armed with a short conical tubercle; pronotum with a broad longitudinal furrow, narrower than that of the male. The beetles normally live under or near the ground-wasp nets which they might get some benefits from the wasps.

Length 28-32 mm.

Distribution: India, Myanmar, Sumatra, Vietnam, N. Thailand (Wiang Pa Pao, Mae Taeng).

S2. ***Chalcosoma atlas*** (Linnaeus, 1858)

กว้างสามเขาแอตลาส กว้างสามเขาเขาใหญ่

Male is entirely black, the pronotum and elytra are shining greenish metallic lustre, very shining above, with long and slender legs in male. Clypeus is strongly bidentate in front, armed with a long sharply pointed horn, strongly curving backwards; pronotum rather small, with a pair of long and slender horns about twice as long as the length of its pronotum in large specimens, curving horizontally outwards and inwards; elytra very smooth and shining; scutellum black, fairly finely punctured and shining. Small male, head bears a rather short, strongly-curved horn, with three sharply-pointed teeth, the middle one at the top and the other two at lower; pronotal horns short, as long as the head or shorter. **Female** is oval shaped, without horns on head nor pronotum, very rough surface, pronotum strongly sculptured and elytra strongly granulated; scutellum fairly finely punctured and shining; legs short.

Length male 60-95 mm, female 50-60 mm.

Distribution: Nepal, India, Myanmar, Malaysia, Indonesia, Philippines, Thailand (Khao Yai, Chanthaburi, occasionally occurs in Kanchanaburi, Chiang Mai).

(1.4 X)



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S1. *Blabephorus pinguis*

(1.2 X)



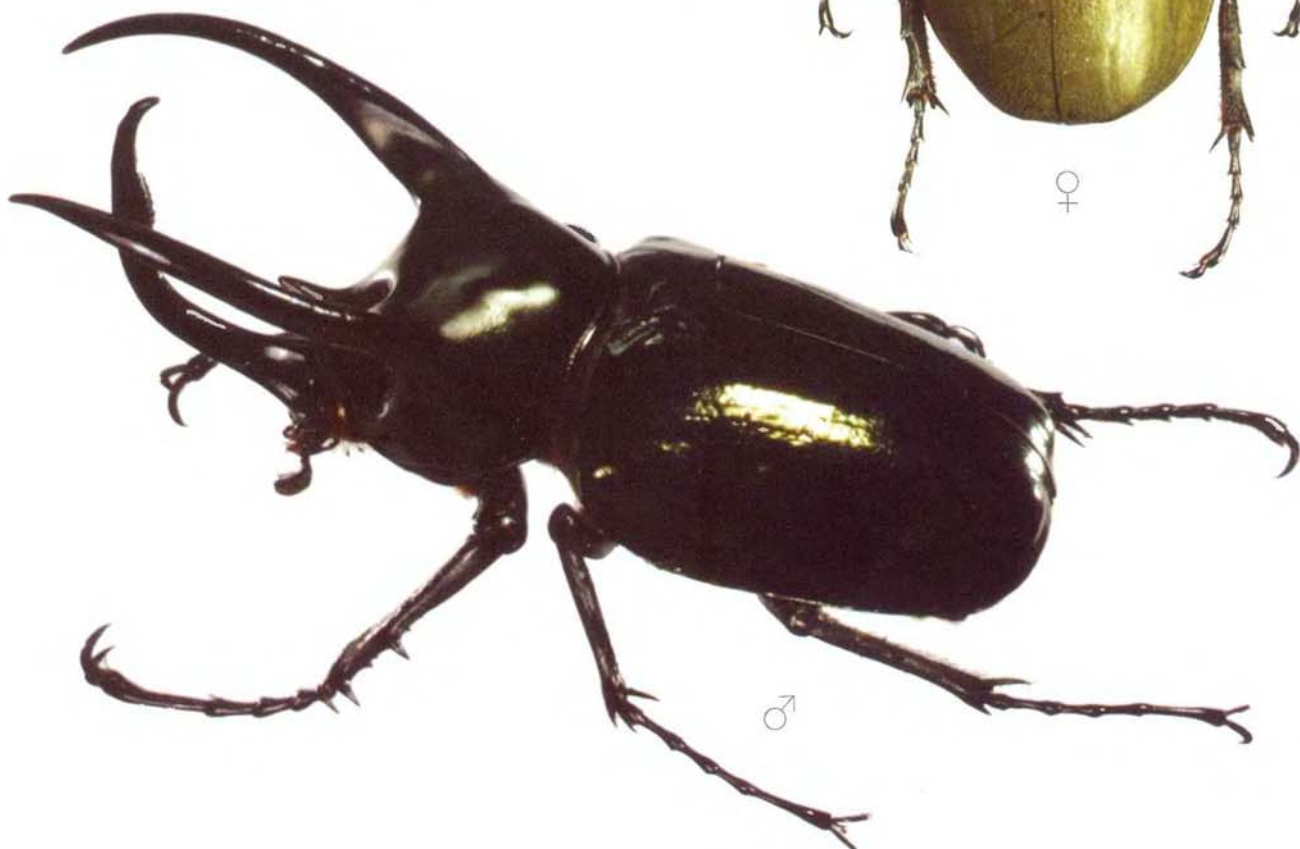
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S2. *Chalcosoma atlas*

S3. *Chalcosoma caucasus* (Fabricius, 1801)

กว่างสามเขาคอเคซัส กว่างสามเขาจันท

Male is very similar to *C. atlas*, but relatively larger in size and length, the largest and longest beetle of Thailand, one from Chanthaburi which preserved in Kasetsart University with its length of 120 mm. Head is armed with a long and slender horn, with a strong tooth at the middle of posterior edge. **Female**, without horns on head nor pronotum, very rough surface especially on pronotum. Elytra are finely clothed with velvety brownish-yellow.

Length, male 65-120, female 50-60 mm.

Distribution: W. Malaysia, W. Java, Sumatra, India, Nepal, Philippines, E. Thailand (Chanthaburi, Trat).

(1.0 X)

S2. *Chalcosoma atlas* (cont.)S3. *Chalcosoma caucasus*

S4. *Clyster retusus* Arrow, 1908

ด้วงแรดหนูปักไม้

Black elongate and rather convex. **Male**, prosternum is forming a free erect process behind the front coxae. Head bears a short horn, nearly straight; pronotum being cut away in the front half and divided by two smooth oblique ridges into three areas, coarsely rugose above, the elevated area behind with a blunt process produced in the middle; elytra closely punctured, with four pairs of dot-lines on each elytron and with a few broken lines in between the pairs. **Female**, head bears two short tubercles in the middle; pronotum being cut away horizontally in the front and bears two slight short tubercles at the front margin.

Length 24 mm.

Distribution: Myanmar, Malaysia, S. Thailand (Khleng Nakha - Ranong).



(1.0 X)



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S3. *Chalcosoma caucasus* (cont.)

(1.7 X)



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S4. *Clyster retusus*

S5. *Eophileurus chinensis* (Faldermann, 1835)

ด้วงแรดจีน

Shining black, rather flat species. **Male**, metasternum is clothed thickly with fine reddish Hairs. Head bears a slender horn; pronotum with a large exclavation extending from the front to near the base, almost circular, the lateral borders of the large exclavation with a strong angular at the middle of each side and a little angular behind of each side, moderately punctured above; elytra strongly grooved and irregularly punctured inside the grooves, partly forming ladder-like pattern. Pygidium is very convex, smooth and shining, except the base and the angles.

Length 24 mm.

Distribution: Myanmar, China, Japan, N. Thailand (Wiang Pa Pao).

S6. *Eophileurus cingalensis* Arrow, 1908

ด้วงแรดบางเขน

Shining black, rather flat. **Male**, metasternum is rather smooth and shining. Head bears a slender horn, quite smooth and shining behind it; pronotum rounded at sides, sharply pointed at front angles, strongly punctured above, with a faint median groove behind, rather deeply and more broadly depressed at the front margin, the depression not reach the middle and its posterior margin bearing two pointed angles; scutellum with a confusedly punctured; elytra with strongly punctured dot-lines, smooth and shining.

Female, head bears a very short

tubercular horn at the middle of the front; pronotum strongly punctured above and rugosely punctured in front, bearing a very faint groove upon its posterior half.

Length 21-23 mm.

Distribution: India, Sri Lanka, Thailand (Bangkhen, Bang Kae, Pakchong).

S7. *Eophileurus platypterus* Wied, 1823

ด้วงแรดดำแม่อาว

Black and shining, closely and very coarsely punctured. Pronotum convex above, strongly rounded at sides, with hind angles rather prominent and sharp. The scutellum bears a few fine punctures. Elytra have rows of rather close large annular punctures. **Male**, head is moderately punctured, with a short horn, which is slightly compressed from side to side and a little produced backwards at base. Prothorax has feebly impression at the front margin and pygidium is very convex. **Female**, the head is rugosely punctured and bear a short stout tubercle. Pygidium is a little bit impressed on each side and almost pointed behind.

Length 14-25 mm.

Distribution: India, Thailand (Doi Pha Hom Pok).

(1.5 X)



S5. *Eophileurus chinensis*



S6. *Eophileurus cingalensis*



S7. *Eophileurus platypterus*



S8. *Eupatorus birmanicus*

S8. *Eupatorus birmanicus* Arrow, 1908

กว้างขวางหูกระต่าย กว้างขวางพม่า

Dark brown to black, moderately elongate. **Male**, head is bidentate in front, bearing a long and slender, sharply pointed horn, curving backwards; pronotum shining, with a strong tooth at front angle; the dorsal part with a pair of spatulate horns, placed closely together behind the middle; elytra convex above, dull dark brown; scutellum densely punctured. **Female** is the same colored, head coarsely rugose above, bearing a pair of minute tubercular horn behind middle, pronotum fairly finely punctured, more densely and rugosely in front, slight shining; elytra dark brown, darker than in the male and slight shining.

Length 38-53 mm.**Distribution:** India, Myanmar and Thailand (Ranong, Kanchanaburi, Tak, Mae Hong Son).S9. *Eupatorus gracilicornis* Arrow, 1908

กว้างขวางเหนือ

The yellow five-horned beetles. **Male**, head is black, bearing a rather long slender, sharply-pointed horn, strongly curving backwards; pronotum black, shining, bearing two pairs of thoracic horns in front and behind of both sides; scutellum densely punctured; elytra brownish-yellow except the black suture and a black narrow border at outer margin of each elytron, rather smooth and shining; scutellum black and rugosely punctured. **Female**, without horn; pronotum is more strongly sculptured and closely rugose at sides and in front, slight shining.

Length 48-70 mm.**Distribution:** India, Myanmar, Laos, Vietnam. Malaysia and Thailand (Kanchanaburi, Loei, Petchabun, Chiang Mai, Chiang Rai).**Host** : Bamboo shoots. Adults feed on young bamboo shoots especially in the mating season, during September to October, the larvae feed on soft deceying wood in the forests.



S8. *Eupatorus birmanicus* (cont.)



S9. *Eupatorus gracilicornis*

S10. *Eupatorus siamensis* (Castelnau, 1867)

กว้างขวางอีสาน กว้างขวางสยาม

Dark brown, moderately elongate. **Male**, head is bidentate in front and bears a long and slender, sharply-pointed horn, strongly curving obliquely forwards, straight upwards and backwards, the curve horn in some small male rather short and forked tip; pronotum dark brown, finely and sparsely punctured, slight shining, broadest at middle and strongly tapered in front, bearing two pairs of strong triangular teeth at front angles of each side. **Small male**, pronotal horns are rather short and blunt; elytra dark brown, slightly paler and less shining than the pronotum; scutellum rounded at apex, finely punctured above. **Female** is similar colored, but head and pronotum without horn; front legs shorter than in the male.

Length 43-68 mm.

Distribution: Thailand (Khao Yai, Chaiyaphum, Loei, Phetchabun).

(1.2 X)



S9. *Eupatorus gracilicornis* (cont.)



S10. *Eupatorus siamensis*

S11. *Oryctes gnu* Mohnike, 1874

ด้วงแรดกะนู ด้วงแรดมะพร้าวใหญ่

The trituberculate rhinoceros beetles, rather large, black and shining above, fringed with brownish hairs at sides of head, pronotum, legs and beneath. **Male**, head is strongly bidentated in front, bearing a long, tapering horn; pronotum being cut away in front half, forming a middle- circular area , surrounded by a ridge, elevated behind with a short blunt horn of three or more prominent teeth in the middle; elytra strongly punctured, with well marked dot-lines. **Female**, head bears a moderately long, tapering horn; pronotum with some teeth in the middle dorsal ridge. Pygidium is fringed with finely short brownish hairs.

Lenth 53-63 mm.**Distribution:** Indonesia, Malaysia, Myanmar, Vietnam, Thailand (Kanchanaburi, Tak).S12. *Oryctes rhinoceros* (Linnaeus, 1758)

ด้วงแรดมะพร้าว

The common coconut rhinoceros beetle, dark reddish-brown, nearly black to black, clothed with brownish pubescence beneath. **Male**, head is strongly bidentated and fringed densely with brownish-yellow hairs in front and at sides, bearing a strong blunt horn of one to two teeth in the middle; pronotum smooth and shining posteriorly and upon a narrow area at sides, with a short of bifurcated horn, pointed forwards; elytra strongly punctured above; sparsely and finely punctured at sides and near apex. Pygidium is rather rounded, finely rugose and rather bear. **Female** is very similar to the male, but relatively larger. Pygidium is pointed and densely clothed with brownish-yellow hairs.

Lenth 37-45 mm.**Distribution:** Myanmar, Cambodia, S. China, Malaysia, Indonesia , Philippines, Thailand (Bangkok, Kanchanaburi).

(1.2 X)



S11. *Oryctes gnu*



S12. *Oryctes rhinoceros*

S13. *Pachyoryctes solidus* Arrow, 1908

ด้วงแรดหน่อไม้

Known as the black bamboo beetle, generally dark brown to black. **Male**, head is bidentate in front, with a long, slender, sharply pointed horn, strongly curving upwards and backwards; pronotum dark brown, strongly cut away in front, forming a very smooth and shining area, except small strongly punctured areas at sides and behind the middle, elevated behind and produced into a pair of short sharp angles at lateral of each side; elytra dark brown, finely and sparsely punctured, with weak costae. **Female** is the same colored, a little narrower and less convex, head bearing a minute horn, pronotum coarsely punctured.

Length 40-54 mm.**Distribution:** Myanmar, N. Thailand (Phrae, Lampang).S14. *Trichogomphus martabani* (Guérin, 1834)

กว้างก็อก ด้วงแรดมะต๋าน

Entirely black and shining. **Male**, is moderately elongate, rather thick body and not so convex above, head bidentate in front and bearing a laterally compressed horn, curving upwards and backwards; pronotum sharply sloped down in front, strongly sculptured all around it, elevated behind into a stout bifurcated horn, pointed forwards, and with a small short horn at each side; elytra strongly punctured with at least one to two strongly depressed lines. **Female**, head is strongly punctured, with a minute horn posteriorly; pronotum without horn, very smooth and shining behind except behind the angles and near the front margin strongly punctured.

Length 37-62 mm.**Distribution:** Myanmar, Thailand (Kanchanburi, Chiang Mai, Phetchabun).



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S13. *Pachyoryctes solidus*

(1.2 X)



♂



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S14. *Trichogomphus martabani*

S15. *Trichogomphus mongol* Arrow, 1908

ด้วงแรดผิวน้ำมัน ด้วงแรดมองโกเลีย

Entirely black, rather smooth and shining and very similar to *T. martabani*, but elytra are almost smooth and nearly unpunctured, with only a few weak dot-lines upon each elytron, with a large irregular punctures close to the base, the apical margin slightly rugosely punctured.

Length 39-49 mm.

Distribution: Myanmar, Cambodia, S. China, Hong Kong, Thailand (Khao Yai, Doi Inthanon, Lampang).

S16. *Trypoxylus dichotomus* (Linnaeus, 1771)*Trypoxylus dichotomus politus* Prell, 1934

กวางญี่ปุ่น

This beetle used to be placed in the genus *Allomyrina*, the common name known as Japanese-horned beetles or Mushi King. Subspecies *politus* has been classified from type specimens from N. Vietnam.

Male, dark reddish-brown to black, head is bidentate in front, bearing a double bifurcated horn, with a long straight-stalk, pointed obliquely forwards and upwards; pronotum slight shining, the dorsal part bearing a short bifurcated horn, curving, pointed upwards and forwards; elytra smooth and shining; scutellum with a depressed dot-line along the margins, fairly finely punctured. **Female** is very rough surface, clothed with velvety yellow above; pronotum strongly granulated and sculptured, with a depression along the median line; scutellum strongly punctured; elytra fairly finely punctured.

Length 45-75 mm.

Distribution: N. Vietnam, S. China, Myanmar, N. Thailand (Wiang Pa Pao).

(1.2 X)

S15. *Trichogomphus mongol*S16. *Trypoxylus dichotomus*

S17. *Xylotrupes gideon* (Linnaeus, 1767)

กว่างชน กว่างโซ้ง กว่างแชน กว่างกิ กว่างแม่อีลุ่ม

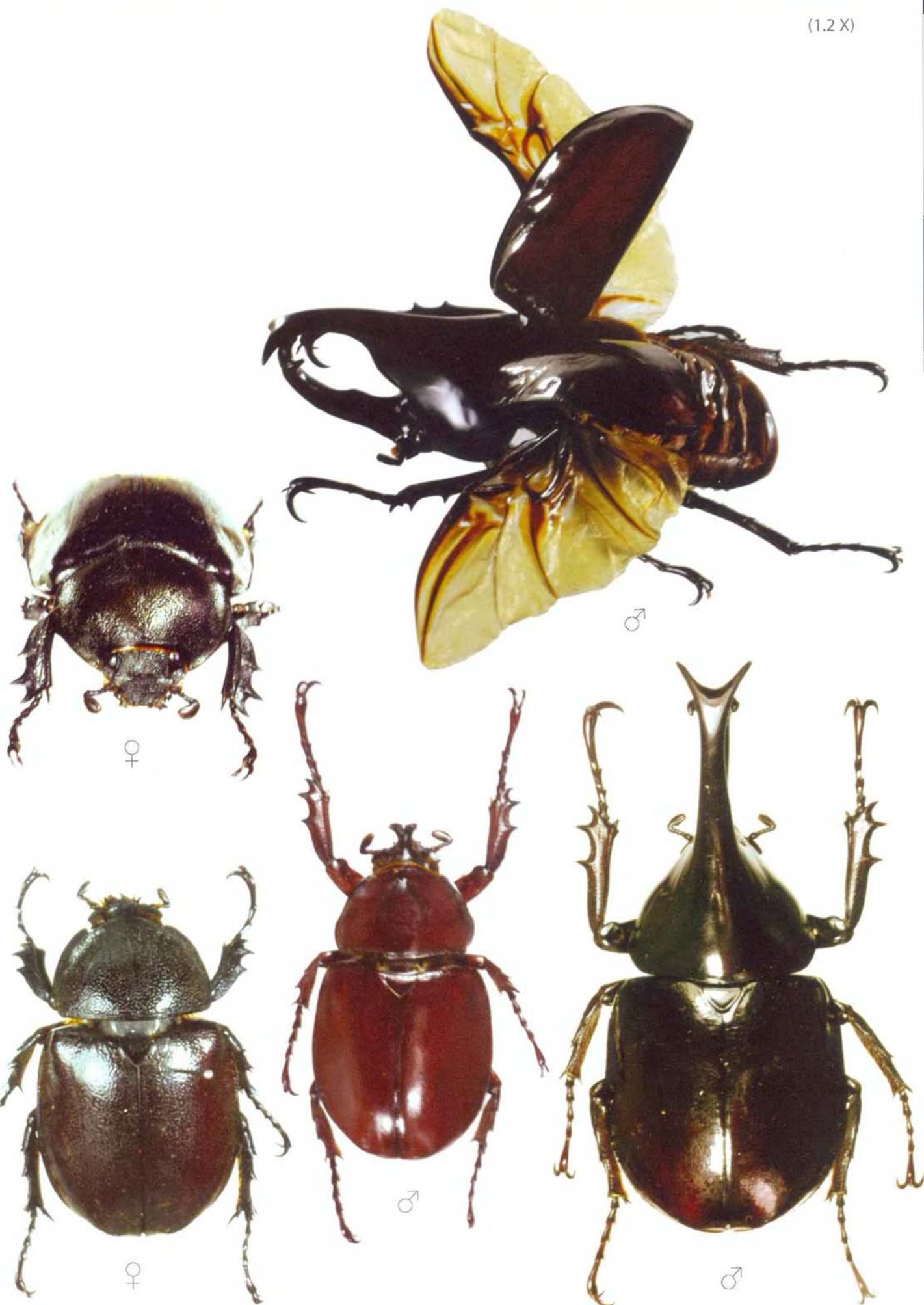
The well-known fighting beetles, body reddish-brown, dark brown to entirely black. **Male**, head is bidenatated in front, angulated just in front of the eyes, bearing a bifurcated horn, projecting obliquely forwards and upwards; pronotum slightly darker colored the the elytra, nearly smooth, shining, bearing the other bifurcated horn, projecting obliquely forwards; elytra moderately granulated, slight shining, with a punctured dot-line. **Small male** is paler colored, mostly reddish-brown, the cephalic horn on the head is extremely short, but distinctly bifid and the thoracic horn vanishes completely, being represented only a slight eminence. **Female** is generally darker in color and the upper surface is much more rugose. Pronotum is coarsely punctured; scutellum thinly; elytra closely and irregularly punctured; pygidium finely rugose and the abdomen irregularly punctured beneath.

Length 28-50 mm.

Distribution: India to China, Malaysia, Sumatra, Australia, Thailand.

Host : Adults prefer feeding on sugarcane and bamboo shoots, larvae feed mainly on decaying woods.

(1.2 X)



S17. *Xylotrupes gideon*

FAMILY SCARABAEIDAE

SUBFAMILY EUCHIRINAE

The beetles of this subfamily are commonly known as "long-armed beetles" or "kwang dao". The male bears a pair of the enormously elongate fore-legs for holding firmly the female while on mating than for climbing braches of trees. The larvae feed on decaying soft wood while the adults feed on sweet exudations from certain kinds of trees especially oaks, *Quercus* spp. They usually hide themselves in a hollow, which is similar to bird nest on the tree-top or under the ground. The pupa is normally covered by wood-fiber cocoon prepared by final instar larva before pupating. There are 3 genera and 14 species known in the world and two species are recorded from Thailand.

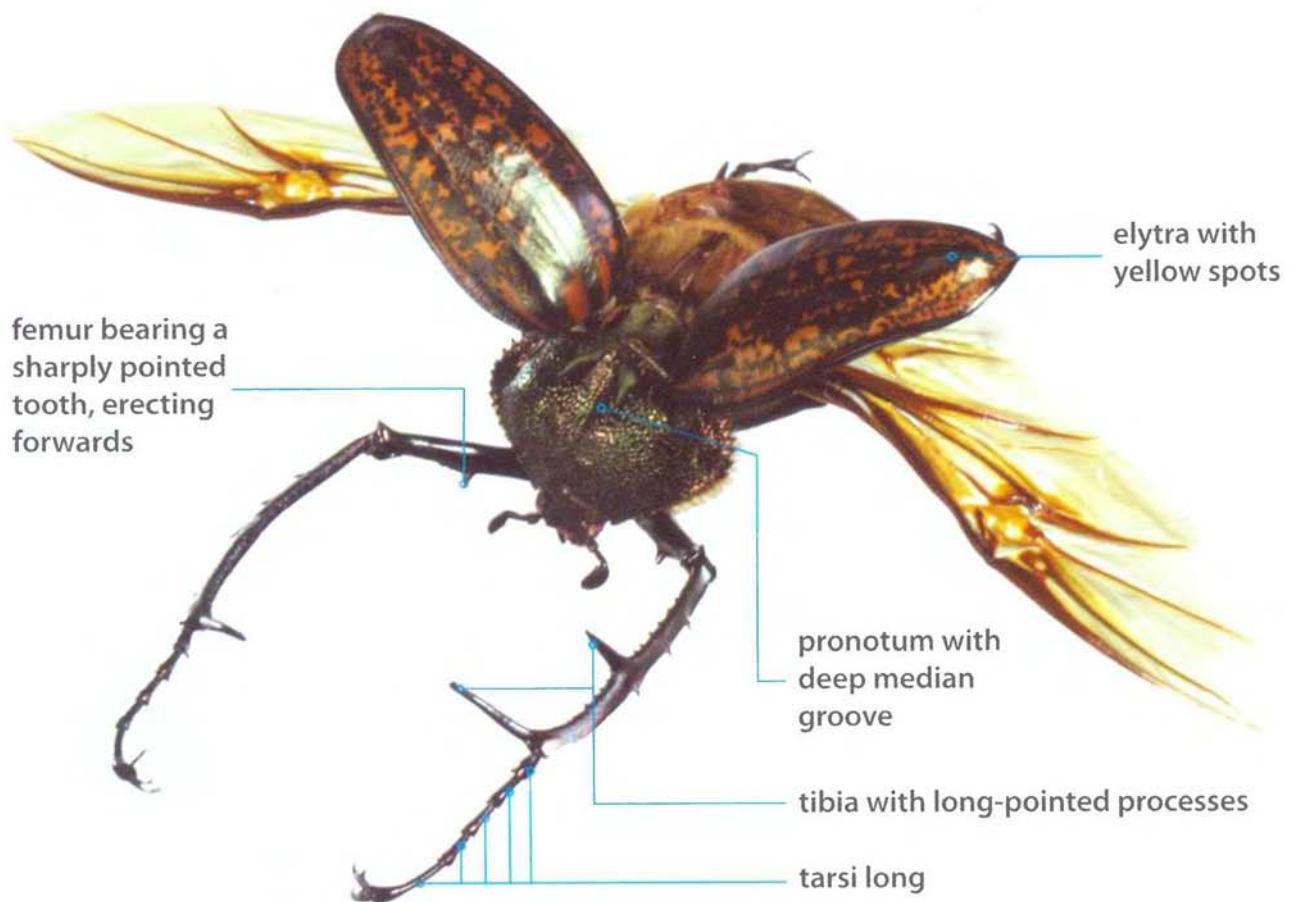


Figure 27. The long-armed beetles, *Cheirotonus parryi*, male with opened wings.



Figure 28. The long-armed beetles; 1. *Cheirotonus gestroi*, pronotum with a larger smooth and shining area at both sides of the median groove, 2. *Cheirotonus parryi*, in copulating.

S18. *Cheirotonus gestroi* Pouillaude, 1913

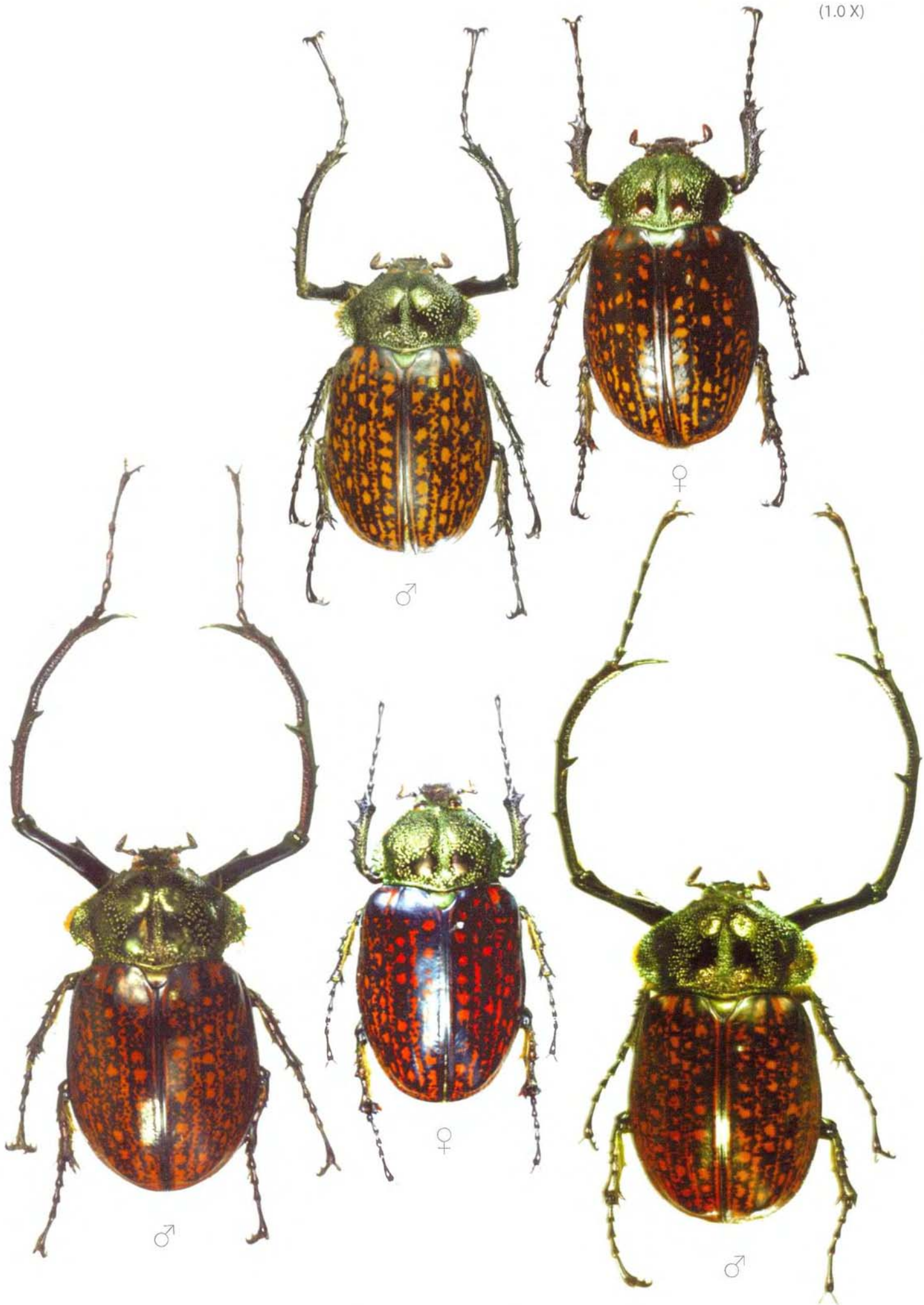
กว้างดาวเกสรอยด์ กว้างดาวหนามขาเดียว

Coppery-green, with elytra almost black, suffused with slight metallic green lustr, clothed with long and thick pale yellow hairs upon sternum, decorated with numerous crowned irregular orange-yellow spots and patches. **Male**, head is strongly and closely punctured, shining above, clypeus deeply excavated. Pronotum is broad, very convex, with a narrow longitudinal groove in front, dilated at the middle and near the base, in the depression and at the sides, strongly and closely punctured, other parts scanty punctured, rather smooth and shining, the lateral margin sharply serrated; the front-femur bearing a sharp pointed tooth, projecting obliquely outwards and forwards, front-tibia uniformly curved, produced into a long-pointed process at apical end and with another moderate long process at very near to the middle. **Female** is very similar to the male in shaped, colored and marked except the shorter fore-legs, pygidium clothed with long, erect hairs.

Length male 50-65 mm., female 45-55 mm.

Distribution: India, Myanmar, N. Thailand (Khao Yai, Doi Pui, Doi Inthanon).

(1.0 X)



S18. *Cheirotonus gestroi*

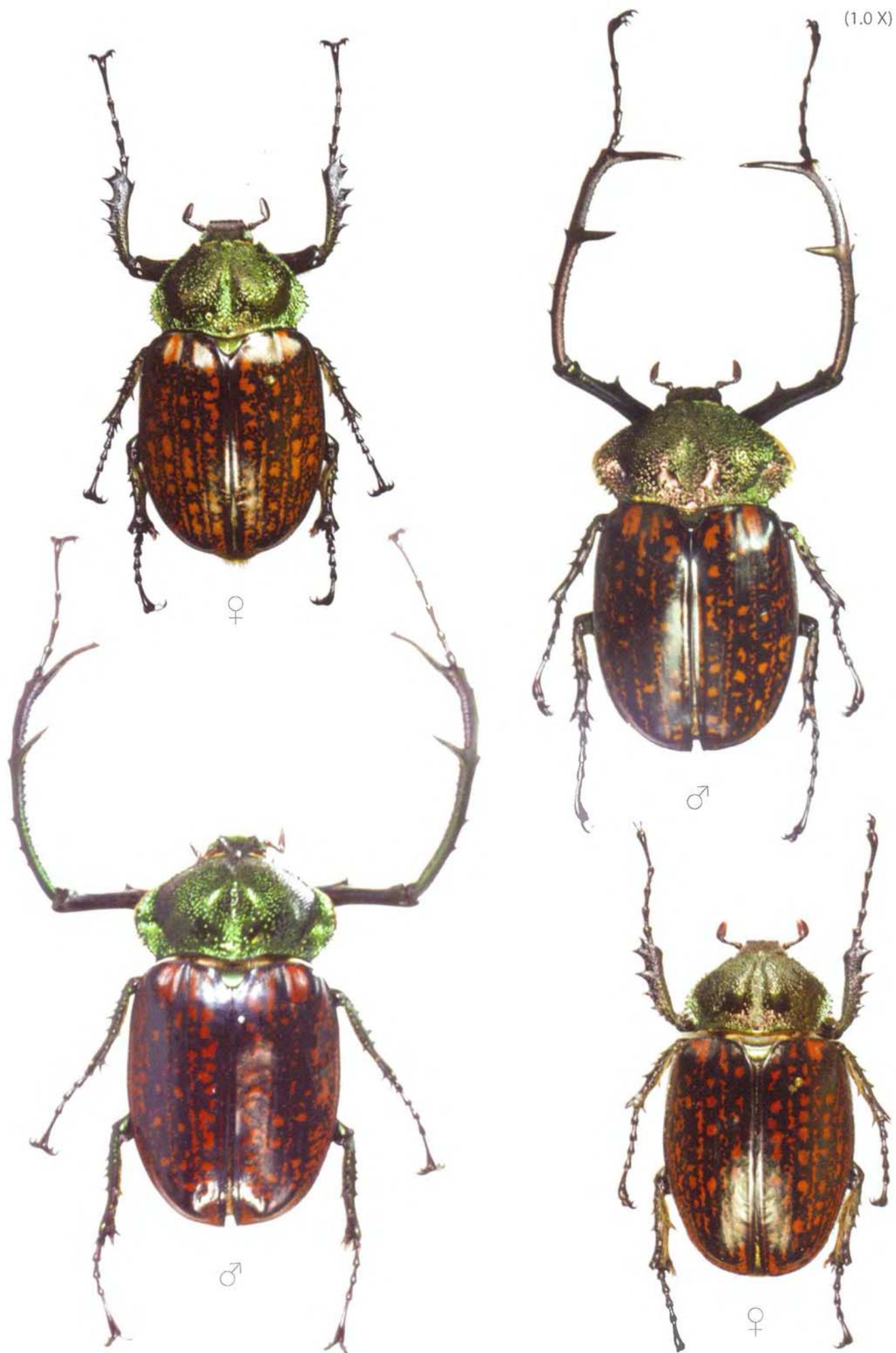
S19. ***Cheirotonus parryi*** Gray, 1848

กว้างดาวแป้น กว้างดาวหนามขาตรง

It is similar to the former species in colored and shaped. They are occasionally found in the same locations and at the same time. **Male**, pronotum is slightly more greenish reflection, strongly and closely punctured in the depression grooves, along its sides, with a very small area near the median groove scanty punctured; the front femur bearing a sharply pointed tooth, erecting forwards at more or less the right angle, the front tibia with a long-pointed process at the apical end and another moderately long-pointed process at before the middle of the apical part. **Female** is similar to the female of the former species, except the coloration of elytra and pygidium clothed with short, close-lying hairs.

Length male 50-65 mm, female 45-55 mm.

Distribution: India, Myanmar, Thailand (Phu Khieo, Khao Yai, Doi Pui, Mae Taeng, Chiang Dao).



S19. *Cheirotonus parryi*

FAMILY SCARABAEIDAE

SUBFAMILY COPRINAE, or SCARABAEINAE

The members of this subfamily are considered as useful beetles. They are generally known as dung beetles or scavenger beetles. Most of them feed on animal dung. Some of them feed also on dead and decaying animals. There is not a single species known feeding on living plants. Most dung beetles found in Thailand are entirely black or brown, sometimes tinted with green, exceptional some which are brilliant colored, such as *Liatongus rhadamistus*.

The antennae of Scarabaeinae are of 8- or 9-segmented which are different from those of the 11-segmented of Geotrupinae. The body is rather short, oval and convex above. The beetles are adapted themselves for digging dung by having broad clypeus and strong front legs. The front tibiae bear sharp spines at the outer margins, front tarsi are sometimes absent or very short.

Particular behaviors of dung beetles are interesting to observe especially the ball-rolling. Many species prepare a dung ball for egg-laying by cutting and rolling a small piece of dung for a long distance. A ball sometimes has been made by two of dung beetles. The pusher of the ball is normally the female and the puller is the male. The ball of the red elephant-dung beetles, *Heliocopris bucephalus* is about 8-12 cm in diameter, which coated outside with a thick layer of hard clay. Those of *H. dominus* are much larger in size. They usually found in a group of 4-7 balls or more in a chamber about 1-2 meters deeply under the ground surface. Each ball contains a single egg which will pass through larval and pupal stages before emerging as an adult. Normally a female has taken care of the balls in the chamber for a period of time otherwise all the larvae may die. The local people in Thailand search for the balls for pupae or the adults to cook them as their special diet food. One ball usually costs 5-10 baht.

Heliocopris dominus and *H. bucephalus* can produce squeaking sound by stridulating the hind-coxa against the coxal wall. The frequency of sound is higher when the hind-legs move faster.



Figure 29. *Heliocopriss dominus*, male.



Figure 30. *Heliocopriss bucephalus*, 1. female, 2. earth cocoons, each contains a larva which feeds and pupates inside. The emerged adult will remain inside for a few more months before making a hole to go outside.

S20. *Catharsius molossus* (Linnaeus, 1758)

ด้วงขี้หมู

Dull black, with the lower part of the body clothed with reddish-brown hairs. **Male**, head is broad, very rugose above except smooth area near the eyes, bearing a sharply pointed horn, projecting obliquely forwards and backwards. Pronotum is vertical in front consisting entirely well-defined granules above, bearing a sharp ridge pointed forwards, with a sharply pointed horn at the end of each side and a short blunt horn in the middle, but reduced into an obtuse angle on some specimens. Elytra are dull black fairly finely punctured, with five depressed lines. **Female**, head bears a short, pointed horn in the center, rugose above except the areas of posterior angles granulated; pronotal horn at sides reduced into small pointed teeth, without smooth areas in front.

Length (without horn) 23-38 mm.

Distribution: India, Myanmar, N. Thailand (Doi Pha Hom pok).

S21. *Copris magicus* Harold, 1881

ด้วงคางคกผา

Black and shining; antennae, mouth parts and hairs clothing the legs and sides of the body are reddish. Body is broadly oval and convex, head semicircular, smooth and shining. The pronotum is very shining and bears a deep longitudinal groove along the middle, its sides almost straight in front, strongly rounded behind, the front angles are truncate and angles obsolete. **Male**, head bears a slender, backwardly curved horn. Pronotum is nearly vertical in front, the dorsal elevation is rather narrow but little dilated at front margin, which form a straight carina interrupted in the middle by the longitudinal groove. On each side of the dorsal elevation there is a deep shining excavation, and each front angle bears a compressed pointed process. **Female**, head bears an erect quadrate lamina, with its upper edge emerginate. Pronotum bears a straight carina parallel with the front margin and not interrupted by the median groove.

Length 18-21 mm.

Distribution: Malaysia, Kalimantan, Thailand (Pak Chong, Mae Taeng).

S22. *Copris nevinsoni* Waterhouse, 1891

แมลงกุดจีหวาย

Smooth, shining black or reddish-black, moderately elongate and very convex, head is evenly rounded in front, margin strongly reflex. **Male**, head bears a long, recurved and pointed horn. The anterior part of pronotum is hollowed and coarsely punctured, elevated basal part smooth and unpunctured. The elytra are deeply striate with faint minute punctures in the striae. **Female**, The cephalic horn is very short but pointed. Pronotum is convex and bears a pair of slight tubercular elevations a little behind the front margin.

Length 17-20 mm.

Distribution: Myanmar, Malaysia, Indonesia, Thailand (Mae Taeng).

(1.3 X)



S20. *Catharsius molossus*

(2.0 X)



S21. *Copris magicus*



S22. *Copris nevinsoni*

S23. *Copris signatus* Walker, 1859

แมลงกุดจีเขานาน

Black, smooth and shining, oval shaped and not very convex, **Male**, the front margin of clypeus has a pair of narrow erect processes, nearly parallel. Head bears a median transverse, erected T-shaped process, just before the eyes, its shaft short and broad and arms rather long and pointed. **Female**, the clypeus margin is rather strongly bilobed in the middle, the head bears a slight conical projection in the front of eyes. 1 male, 24.V.1992, is in coll. of the author.

Length 10-14 mm.**Distribution:** Ceylon, Central India, N. Thailand (Fang).S24. *Digitonthophagus bonasus* (Fabricius, 1775)= *Onthophagus bonasus*

ด้วงขี้รอบดาด

Brownish-yellow, with the head, pronotum except at sides and the base, the elytral suture, upper surface of legs, coppery black, the whole surface with metallic reflection. **Male**, head bears a middle short horn and a pair of moderately long, sharply-pointed horn, curving outwards and upwards. Pronotum is very smooth in front and behind, with fine granules in the middle, above and around a pair of knob-like process. Elytra are finely striated.

Length 12-15 mm.**Distribution:** India, Myanmar, Cambodia and Thailand (Khao Yai).S25. *Garreta ruficornis* (Motschulsky, 1854)= *Gymnopleurus ruficornis*

ด้วงคางคกขาวยาวสี่หยัก

Sooty black above and a little more shining beneath, very broad oval, slight convex above, with long and slender legs, the front tibia armed with three teeth occupying more than one-third of the outer edge, the remainder coarsely serrate. The front femur is not sharply carinate differs from a close relate species **G. dejeani**, but narrowly flattened along its anterior edge, and bears a rather sharp tooth a little beyond the middle. Head is finely and closely granular, clypeus acutely notched in the middle and bearing four rounded lobes. The sides of pronotum is rounded, the front angles moderately prominent and hind angles obtuse. The elytra are lightly and inconspicuously striate, the lateral margin strongly excised. **Male**, the front tibia is longer than that of the female, more strongly but less regular curved, and less dilated from base to apex.

Length 14-19 mm.**Distribution:** Assam, S. China (Yunnan), N. Thailand (Doi Inthanon).

(2.0 X)



♂



♂ Δ



♂

S23. *Copris signatus*



♂



♂



♀



♀ Δ

S24. *Digitonthophagus bonasus*

(1.8 X)



♂



♂ Δ



♂



♂ Δ



♀



♀ Δ

S25. *Garreta ruficornis*

S26. *Gymnopleurus aethiops* Sharp, 1875

ด้วงคางคกขายาวหนวดเหลือง

Smooth, black above, moderately shining with antennal club bright yellow; head is finely granulated at sides, notched in front, forming two rounded clypeal processes; pronotum with the sides obtusely angulate in the middle, the front angles acutely produced. **Male**, front tibia is armed with three strong teeth occupying one-third of the outer edge, the remainder of the edge strongly serrate, the spur of the front tibia is broad and flat, obliquely truncate at the end. The anterior edge of the front femur forms a sharp carina from base to about 2/3 its length to a tooth.

Length 20-22 mm.**Distribution:** India, Yunnan, Thailand (Doi Pui, Kamphaeng Saen).S27. *Gymnopleurus sinuatus* Olivier, 1789

ด้วงคางคกขายาวสองหยัก

It is black or very coppery black, entirely opaque above, with the club of antennae dull yellow, rather broad and flat, clypeus with two frontal lobes. Legs are slender, the front tibia armed with three acute teeth placed close together in the terminal third of tibia, the remainder finely serrate. The front femur bears a small tooth placed at about 3/4 of its length from the base, the frontal edge forming a sharp curving carina from the base to the tooth. The pronotum is feebly convex, lateral margins abruptly angulate in the middle and nearly straight to the front and hind angles. **Male**, the front tibia is a little elongate and terminal spur is truncate and bidentate. **Female**, tibia is a little broader and its terminal spur is slender and acute.

S28. *Heliocopris bucephalus* (Fabricius, 1775)

แมลงกุดจีแดง แมลงกุดจีเล็ก

Deep red to black, sides of pronotum, elytra and lower surface usually deep red. **Male**, head is black, very rugose behind, with a moderate-slender horn in the middle, slightly curved backwards; pronotum black, rugosely and strongly punctured, being vertical in front, with a sharp ridge bearing a tooth at the end of each side, and next to it a smaller tooth arising at the inner edge in fully-developed males. **Female**, head is strongly cut down at the front half and behind angles, very rugose above, the high elevated area bearing three short horns in the middle and at sides; pronotum bearing a sharply curved ridge in front, the front angles without teeth.

Length 39-55 mm.**Distribution:** India, Myanmar, Java, Malaysia, Thailand (Chiang Dao, Mae Rim).

(1.2 X)



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♂ △



♀



♀ △

S26. *Gymnopleurus aethiops*



♂



♂ △



♀



♀ △

S27. *Gymnopleurus sinuatus*

(1.0 X)



♂



♂



♀

S28. *Heliocopris bucephalus*

S29. *Heliocopris dominus* Bates, 1868

แมลงกุดจีใหญ่ ตัวงาช้าง

The large elephant dung beetles are the largest dung, generally deep red or black colored; sides of pronotum, elytra and the lower surface usually deeper red. **Male**, head is large, very rugose behind, with a bifurcated tooth at each side; pronotum being vertical in front, the front angles sharply produced outwardly as hook-like processes, bearing a triangular-shaped horn in the middle, with a smooth area at the base of each side; elytra smooth and shining, with deeply depressed lines. **Female**, head bears a strong horn in the middle and a small horn at each side of the middle half of the head. Pronotum bears a sharply curved ridge in front, curving forwards in the middle and at the end of both sides.

Length 50-65 mm.

Distribution: India, Myanmar, Malaysia, Thailand (Chiang Dao).

S30. *Liatongus rhadamistus* (Fabricius, 1775)

แมลงกุดจีเรื่อซ้อน

It is a bright orange-yellow species, with head partly in male or entirely in female, the pronotum except at sides, elytral suture and markings on elytra, black. **Male**, clypeus bears a sub-triangular frontal carina uniting the lateral sutures. Pronotum is a little longer than wide, with a deep excavation extending almost for its entire length, open behind, its front and sides produced upwards, rather sharp and pointed in front. **Female**, head is black, bears a short tubercle in front of the flat area. Pronotum is a little wider than long, with a median groove, dilated into slight triangular depression at the behind half.

Length 13-15 mm.

Distribution: India to N. Thailand (Doi Pha Hom Pok).

(0.9 X)



♂



♀



♂



♀

S29. *Heliocopriss dominus*

(2.5 X)



♂



♂



♂



♀

S30. *Liatongus rhadamistus*

S31. *Onitis excavatus* Arrow, 1931

ด้วงคางคกมันหนามคู่

Reddish-black or black and shining, the antennae, mouth organs and hairy clothing of the legs, lower surface reddish. Rather narrowly oval, moderately convex, clypeus is shortly elliptical. The clypeo-frontal carina is widely interrupted in the middle, and there is a short transverse clypeal carina in front of it and a small frontal tubercle behind it. Pronotum is very smooth, without a longitudinal groove, the base very obtusely angular. Elytra are very finely striated, with the 1st, 3rd and 5th intervals a little raised and narrower than those between them. **Male**, frontal tibia is elongate, with four external teeth and a sharp incurved terminal process. The middle femur has a rounded lobe in the middle of the hinder edge, two sharp teeth near the extremity above and one beneath. **Female** is unknown.

Length 17 mm.

Distribution: India, Thailand (Kamphaeng Saen).

S32. *Onitis philemon* Lansberge, 1875

ด้วงคางคกเขียว

Dark green, moderately shining, rather oval shaped, head is rugose in front. Clypeo-frontal ridge is narrowly interrupted by a tubercle in the middle. Pronotum is strongly punctured, without a well-marked smooth median line, the front margin is straight, strongly rounded in the middle, the base is obtusely angulate in the middle. Elytra are moderately strongly striate, the 1st, 3rd and 5th intervals a little narrower and more elevated than the 2nd and 4th. **Male**, the front legs are elongate, the tibia slender, strongly curved in front, armed with four feeble teeth externally. The middle femur has a sharp tooth near the end of the lower edge and sometimes a rounded lobe in the middle. **Female**, front tibia is broad and armed with four strong teeth and an articulated terminal spur.

Length 18-21 mm.

Distribution: India, Thailand (Khao Yai, Doi Inthanon).

S33. *Onitis singhalensis* Gillet, 1911

ด้วงคางคกสิงห์

Black or greenish-coppery, not very shining, elongate-oval shaped; head closely granular, clypeus separated from the forehead by a straight carina interrupted in the middle, with a short transverse carina just before it and a conical tubercle immediately behind. Pronotum is fairly strongly unevenly punctured, with a well-marked median line. Elytra are moderately strongly striate, the 1st, 3rd and 5th intervals are a little narrower and more elevated than the 2nd and 4th. **Male**, the front legs are elongate, the tibia is slender and strongly bent in front, armed externally with four short teeth. The middle femur has a sharp tooth near the middle of the posterior edge and another at the extremity. **Female**, clypeus is a little longer, the front tibia is broad and armed with four strong teeth and an articulated terminal spur.

Length 18-19 mm.

Distribution: India, Thailand (Trat, Khao Yai).



S31. *Onitis excavatus*



S32. *Onitis philemon*



S33. *Onitis singhalensis*

S34. *Onitis siva* Lansberge, 1875

ด้วงคางคกขีว้า

Black or reddish-black, elongate-oval, moderately convex, clypeus being divided into two areas by a strong elevated and curved carina, continued backwards along the inner margin of each eye to meet the hind marginal carina, which is strongly elevated in the middle. The pronotum is very finely granulated, rounded at sides, with a trace of longitudinal median groove posteriorly, uniting with the close and narrow basal depressions. **Male**, the front legs are elongate, tibia slender, strongly curved anteriorly, armed with four sharp outer teeth and an internal sharp process. The middle femur bears a sharp tooth just beyond the middle of the lower edge. **Female**, clypeus is more produced in the front, the median elevation of posterior marginal ridge of the head is broader and stronger than in the male, the front tibia is nearly straight.

Length 27-30 mm.**Distribution:** India, Thailand (Doi Pha Hom Pok, Khao Yai).S35. *Onitis virens* Fabricius, 1801

ด้วงคางคกสันขวาง

Black, moderately shining, with legs and lower surface fringed with reddish hairs; elongate oval, head with a short straight transverse ridge in front of the clypeo-frontal ridge which narrowly interrupted by a short tubercle just behind it; pronotum moderately closely punctured, with a well-marked smooth median line; elytra are finely depressed striated; meta-sternum flat. **Male**, front tibia is elongate and strongly curved towards the end, prolong into a long blunt spine at the extremity, armed with four short teeth. Middle femur bears a strong rounded lobe at the middle of the posterior edge and a tooth a little bit before the extremity. The middle tibia is slender at the base, strongly and abruptly dilated. **Female**, the front tibia is short and broad, with four stout teeth. The middle and hind legs are without teeth.

Length 19-20 mm.**Distribution:** India, Thailand (Pak Chong).S36. *Onthophagus imperator* Castelnau, 1840

ด้วงขี้เขารอบเขี้ยว

Dark metallic green; **Male**, head bears a long and slender curved horn, minute serrated behind the middle of the face; pronotum very deeply excavated at the front half, rather smooth and shining, bearing a strong flattened horn in the middle, pointed obliquely forwards; elytra coppery green, short and rather rounded at apex. **Female**, head is coppery green, strongly punctured, with a moderately sharply-pointed horn, very strongly punctured on the face at each side; pronotum strongly punctured at sides, with a pair of sharp ridge in the middle instead of a horn.

Length 16-18 mm.**Distribution:** India, Thailand (Doi Pha Hom Pok).

(1.5 X)



S34. *Onitis siva*

(1.8 X)



S35. *Onitis virens*



S36. *Onthophagus imperator*

S37. *Onthophagus seniculus* Fabricius, 1781

ด้วงขี้ควายเขาชี้

It is dark chocolate-brown, with the head and pronotum coppery red and the antennae, femora, pygidium, parts of lower surface, four basal spots upon the elytra, orange-red. **Male**, the elytral spots usually 4 of them are at basal margin of elytra upon the 2nd, 3rd, 4th and 6th intervals. The dorsal part of pronotum bears a pair of long, diverging, horizontal processes, the whole front margin smooth and shining. **Female**, the elytral spots are usually reduced. Pronotal processes are much shorter than in the male. The front tibia is elongate, with 4teeth and stronger than those of the females.

Length 12-15 mm.**Distribution:** Myanmar, Malaysia, Indonesia, Thailand (Doi Inthanon).S38. *Synapsis birmanicus* Gillet, 1907

ด้วงคางคกมันพื้นเดียว

Black, very smooth and shining species; head is large, bilobed in front, densely punctured and rugose in front, with a blunt knob in the middle, the ocular lobes at sides not very long; pronotum rather rounded at sides, with a sharp tooth at the front angle; elytra smooth and shining, with well-marked parallel lines.

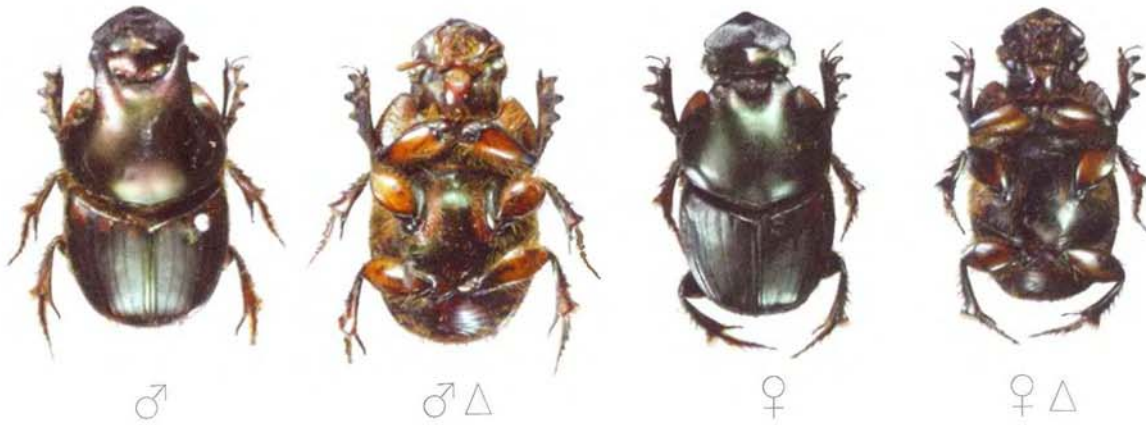
Length 25-28 mm.**Distribution:** Myanmar, N. Thailand (Doi Pha Hom Pok).S39. *Synapsis tridens* Sharp, 1881

ด้วงคางคกสามฟัน

Black, not very shining, oval and not very convex above; head is large, rugose in front, bearing a little short horn in the middle, post angle produced into a long sharply-pointed process, curving backwards of each side; pronotum rather rounded at sides, with three sharp teeth at the front angles; elytra dull black with well-marked stripes.

Length 30-31 mm.**Distribution:** India, Myanmar, N. Thailand (Doi Pha Hom Pok).

(2.0 X)



S37. *Onthophagus seniculus*

(1.5 X)



S38. *Synapsis birmanicus*



S39. *Synapsis tridens*

FAMILY SCARABAEIDAE

SUBFAMILY GEOTRUPINAE

The eleven-segmented antennal species, *Enoplotrupes sharpi*, the only single species which represents the Subfamily Geotripinae. Some authors raised this subfamily up to be a family level. This beetle found feeding on human excrement and animal dung in highland forests mainly in the northern Thailand.

S40. *Enoplotrupes sharpi* Jordan & Rothschild, 1893

ด้วงคราม

Entire body is dark bluish purple. **Male**, head bears a long, sharply pointed horn curving upwards and backwards. Antennae are 11 segmented; pronotum with a bifurcated horn, projecting obliquely forwards; elytra rough, but rather shining, rounded at apices, entirely covering the abdomen. **Female** is rather flat above, head without horn. Pronotum bears a strong ridge, pointed at sides.

Length 29-34 mm.

Distribution: Myanmar, N. Thailand (Doi Inthanon, Doi Pha Hom Pok).

(1.6 X)



S40. *Enoplotrupes sharpi*



FAMILY SCARABAEIDAE

SUBFAMILY MELOLONTHINAE

They are known as "June beetles". The members of this subfamily normally are plant feeders, some of them are of economic importance. Two species of Melolonthinae are included in this book, ***Polyphylla tonkinensis*** and ***Lepidiota stigma***. The latter is one of destructive pests of sugarcane. Their larvae feed on sugarcane roots which causing the dryness of leaf and eventually the death of sugarcane. The beetles usually emerge in February, about 20 days after mating the females lay their eggs in the soil which take about 18 days. Eggs hatch into larvae which will live for 8-9 months and pupate for another 2 months.

S41. ***Lepidiota stigma*** Fabricius, 1798

แมลงมูลหลวง

They are large sugarcane white grubs. Head and pronotum are dark brown; elytra reddish-brown, or brownish-white to white, normally male with darker colored than the female. Body is strongly convex above, elytra nearly vertical posteriorly and with a prominent large white spot at the upper part of posterior angle of each elytron.

Length 35-47 mm.

Distribution: Myanmar, Java, Malaysia, Thailand (Kanchanaburi).

Host : sugarcane (อ้อย), casava (มันสำปะหลัง), mango (มะม่วง), coconut (มะพร้าว), *Strebus asper* (ข่อย), *Pithecellobium dulce* (มะขามเทศ).

Polyphylla Harris, 1841

S42. ***Polyphylla tonkinensis*** Desv.

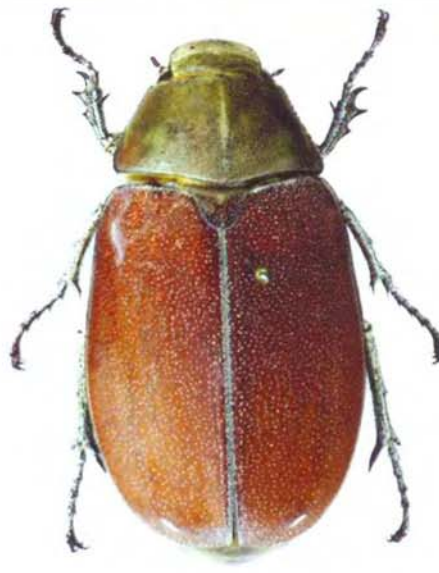
แมลงมูลลายจีน

Very similar to the European species, ***Polyphylla fullo*** which I was wrongly used in my first edition. It is reddish-brown, slightly shining, with pubescence white pattern upon head, pronotum, scutellum, elytra, pygidium and legs. Clypeus is short, square, slightly dilated in front, the front margin nearly straight, strongly punctured above; pronotum strongly punctured, with a well-defined pubescence-white stripe at median line; elytra rugosely punctured, antennal club composed of seven joints. **Male** has larger and longer antennae than the female.

Length 32-36 mm.

Distribution: S. China, Vietnam, Laos, Myanmar, Malaysia, Thailand (Doi Pha Hom Pok, Wiang Pa Pao, Kanchanaburi).

(1.2 X)



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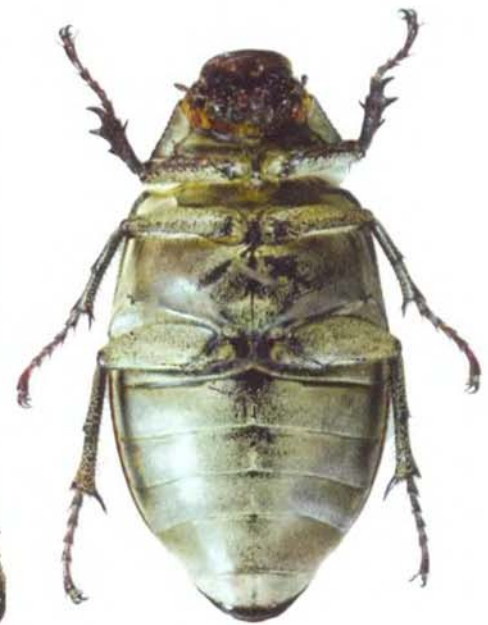
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S41. *Lepidiota stigma*

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S42. *Polyphylla tonkinensis*

FAMILY SCARABAEIDAE

SUBFAMILY RUTELINAE

Rutelinae are widespread in Thailand and South East Asia and comparatively commoner than Melolonthinae. The larvae are root feeders while the adults living and feeding on young leaves, sometimes are called leaf chafers. The world species of Rutelinae are between two and three thousand. India species including Myanmar and Thailand are about 400 species and about sixty percents of them belong to two genera, *Anomala* and *Adoretus*.

The rose beetle, *Adoretus compressus* is a destructive pest of roses, field crops and many fruit crops. The adults which are small gray beetles feed on leaves only at night and hide under the ground in the day-time. The larvae feed also on roots and rotten wood. The green chafers, *Anomala grandis* are the most common species of the genus. The beetles of this genus mostly are brilliant colored from yellow, green, golden-green or golden. The larvae feed on roots of grasses, field crops and decaying logs.

Although most of Rutelinae are small sized beetles, but some members of this subfamily bear peculiar-shaped mandibles, such as in males of *Dicaulocephalus feae*, *Fruhstorferia dohertyi*, *F. semaculata*.



Figure 31. *Fruhstorferia dohertyi*, 1. a fullgrown larva; 2. anadult male.



Figure 32. The two different colored forms of *Fruhstorferi sexmaculata*, females.



Figure 33. *Anomala grandis*, 1. larval exuvia and pupa; 2. adult newly emerged in the early morning after 18 days of pupal stage.

S43. *Adoretus compressus* (Weber, 1801)

ด้วงกุหลาบ

Head, pronotum and elytra reddish-brown, rather densely clothed with short scale-like whitish-gray setae above; elytra with three well-marked costae and a prominent callus at apical angle of each elytron.

Length 11 mm.

Distribution: India, Myanmar, Malaysia, Indonesia, Philippines, Thailand.

Host : Rose, oil palm, corn, sorghum, castor bean, groundnut, soybean, mungbean, grape, longan, litchi, cocoa, sugarcane and tea, etc.

S44. *Anomala dimidiata* (Hope, 1831)

แมลงนูนเขียวแฉับเป็ด

Head is yellowish-green, clypeus densely punctured, eyes not prominent; pronotum, finely and moderately punctured, rather shining, with the sides uniformly curved; scutellum and elytra yellowish-green, finely punctured, legs and lower surface of the body reddish-brown.

Length 19-21 mm.

Distribution: Nepal, India, Myanmar to Thailand (Wiang Pa Pao, Doi Pui, Khao Yai).

S45. *Anomala diversipennis* Arrow, 1917

แมลงนูนแดงอกทอง

Head, pronotum and scutellum are brownish-yellow, with golden-green reflection above, fairly finely punctured; eyes small and widely separated; elytra dark red to nearly black, deeply grooved longitudinally, with six grooves on each elytron.

Length 16-18 mm.

Distribution: Myanmar, N. Thailand (Wiang Pa Pao).



S43. *Adoretus compressus*



S44. *Anomala dimidiata*



S45. *Anomala diversipennis*

S46. *Anomala grandis* (Hope, 1840)

แมลงภู่นเขียวธรรมดา

Bright green, rather large sized of this subfamily; head is green, clypeus fairly finely punctured and tinted with reddish anteriorly; pronotum convex, green, fairly finely punctured, elytra bright green, strongly convex above, not broadest behind, finely punctured; pygidium very finely wrinkle. We have bred and reared these beetles at Siam Insect-Zoo. The life cycle from egg, larva, pupa and adult lasted for about 2-3 weeks, 6-7 months, 3 weeks and 2-3 months, respectively. The larva feeds on rotten and decaying wood.

Length 27-30 mm.**Distribution:** India, Myanmar, Laos, Cambodia, Malaysia, Thailand (Chiang Mai, Kanchanaburi).S47. *Anomala variegata* Hope, 1831

แมลงภู่นลายขวานคู่

Pale brownish-yellow with metallic suffusion species; head bears two black spots on vertex; pronotum shining, with a black stripe at median line, an irregular elongate black stripe nearly reaching the front and behind margins, a black spot at base of each side; elytra with deep punctured dot-lines. Pygidium bears some long hairs at the apex.

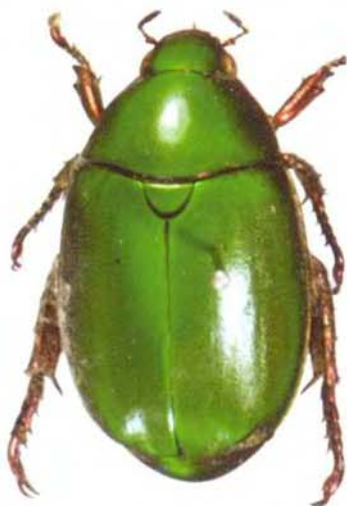
Length 12 mm.**Distribution:** Nepal, Sikkim, N. Thailand (Wiang Pa Pao).S48. *Dicaulocephalus feae* Gestro, 1888

แมลงภู่นเขากวางราบ

Male body is short, broad and convex; head nearly black, broad and triangular, mandibles strongly produced laterally and curved backwards, eye-ridge produced outwardly into a spine at each side, clypeus with a small blunt tubercle at the front margin; pronotum brownish-yellow, strongly convex and shining; elytra short, dull brownish-yellow; the body clothed beneath with long yellow hairs. **Female**, head is black, strongly bidentated at the front margin; pronotum black, shining and fairly finely punctured; elytra dark brown, fairly finely punctured and tinted with black at the punctures at base and lateral margins.

Length 21-25 mm.**Distribution:** Myanmar, N. Thailand (Doi Pha Hom Pok).

(1.8 X)



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(2.0 X)

S46. *Anomala grandis*

(1.6 X)



♂



♂

S47. *Anomala variegata*



♀



♂



♂



♂



♂

S48. *Dicaulocephalus feae*

S49. *Dicaulocephalus tetsuoi*

แมลงนูนเขากวางเจียง

Similar to *D. feae*, but male differs in mandibles curving obliquely forward and sideward. Pronotum is quite straight at base while that of the former species slightly rounded lobed at middle especially in large male.

Length 25-27 mm.

Distribution: Confined to N. Thailand (Doi Pha Hom Pok, Wiang Pa Pao).

S50. *Fruhstorferia birmanica* Arrow, 1907

แมลงนูนแดงพม่า

Entire body deep red, the mandibles produced as long as its head in male while those of the female not so and acute; pronotum coarsely punctured; elytra irregularly punctured, some of which forming lines; pygidium finely punctured and fairly clothed with yellow hairs.

Length 17-20 mm.

Distribution: Myanmar, N. Thailand (Doi Pha Hom Pok, Doi Pui).

S51. *Fruhstorferia dohertyi* Kraatz, 1905

แมลงนูนปากเคียวเหลือง

Male, color form is pale greenish-yellow, head not large, clypeus with a narrow rounded lobe in front, mandibles reddish-brown, slender, sharply pointed and calliper-shaped; pronotum not very convex, broadest at the middle, finely and closely punctured, but shining; elytra closely punctured, shining, their apical margin rounded and apical calli prominent, with reddish spot tinted at calli and near the apical margins; front tibia armed with three sharp teeth, the mid- and hind-tibiae smooth without ridges or spines at the outer edge. **Female** is darker colored, head reddish-brown, with long rounded lobe between short mandibles, the lobe more or less as long as the mandibles; pronotum greenish-brown; elytra reddish-brown, not very convex.

Length male without horn and female 18-19 mm.

Distribution: Myanmar, Thailand (Doi Pha Hom Pok, Wiang Pa Pao).

(1.3 X)



S49. *Dicaulocephalus tetsuoi*



S50. *Fruhstorferia birmanica*



S51. *Fruhstorferia dohertyi*

S52. *Fruhstorferi sexmaculata* Kraatz, 1905

แมลงนูนปากเคียวเขียว

Male is similar to *F. dohertyi*, but coloring is green on elytra, with pronotum green to black, very convex, broadest at the middle, finely and closely punctured, but shining. **Female** is greenish-yellow or reddish-brown with also similar markings to the female of the latter, but the dark reddish brown band at behind the middle slightly extended towards to the middle. It is one of a difficult beetles to breed. Because the adults have a short live prefer feeding on flowers than sweet jelly or ripen fruits.

Length male without horn and female 18-19 mm.

Distribution: Myanmar, Thailand (Doi Pha Hom Pok, Wiang Pa Pao).

S53. *Parastasia alternata* Arrow, 1899

แมลงนูนแดงเปลี่ยน

Head is black, clypeus bidentate in front; pronotum orange-red to dark red, very convex, finely punctured, but very shining, with an extremely narrow black band at base and at front margin. Elytra are orange-red, with a narrow black band at base, weakly punctured, with about seven faint dot-lines on each elytron. Legs and lower part of the body black, front tibia with three sharp teeth, of which the two posterior ones are closed together.

Length 19-20 mm.

Distribution: India, Myanmar and N. Thailand (Wiang Pa Pao).

S54. *Parastasia birmana* Arrow, 1899

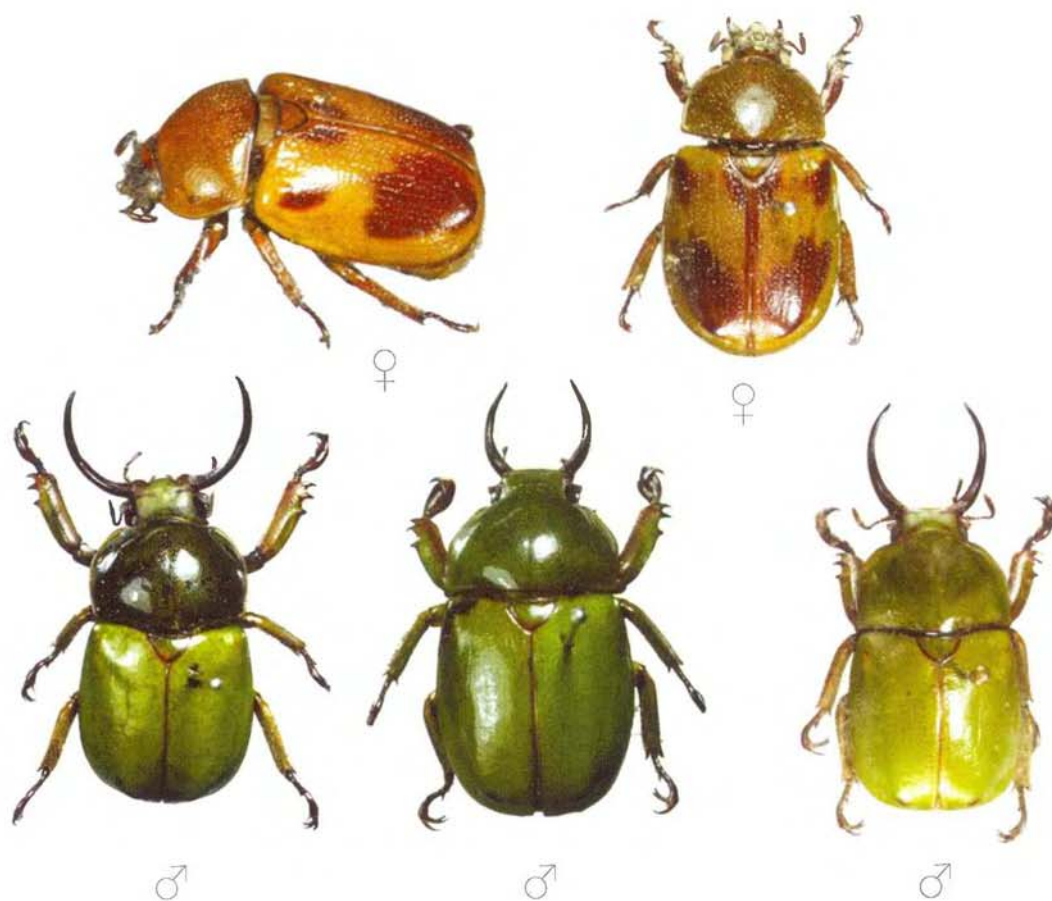
แมลงนูนหยักเหลือง

Head and pronotum black, extremely smooth and shining above, the latter finely punctured above in front and more strongly at sides. Elytra are black, shining, with a zigzag transverse yellow band upon the front half and with a spot at behind half near apex of each elytron. **Male**, the pronotum is less convex and more produced in the front. The elytra are straight at the posterior edge and the orange band is narrow. **Female**, the sutural angles of the elytra are acutely produced and the orange band is broad, extending to the front margin of scutellum.

Length 21-24 mm.

Distribution: Myanmar, Yunnan, Thailand (Doi Pha Hom Pok).

(1.3 X)



S52. *Frtuhstorferi sexmaculata*



S53. *Parastasia alternata*



S54. *Parastasia birmana*

S55. *Parastasia ochracea* (Waterhouse, 1875)

แมลงภู่นานยางไม้ลาย

Male is bright yellow, head with a small black spot on each side between eyes; clypeus blunt, bilobed; pronotum shining, with black spots, four on each side, three at median line; elytra shining, with black spots and lines, a spot near scutellum, two short oblique stripes near the suture and some irregular-longitudinal wave-lines on each elytron. Antennae are rather long, the club nearly as long as the foot-stalk. **Female**, unknown as stated in Arrow (1915), I have a darker ochraceous (yellow with a slight tinge with brown) specimen which believed to be the female of this species as illustrated.

Length male 16 mm, female 18 mm.

Distribution: Sikkim, N. Thailand (Wiang Pa Pao, Doi Pui).

S56. *Parastasia sulcipennis* Gestro, 1888

แมลงภู่นานวลแดง

Head black, clypeus strongly bidentated in front; pronotum red, convex, finely punctured, but shining; scutellum red, broader than long; elytra dark red, bearing five longitudinal grooves; pygidium red, very smooth and shining. **Male**, prothorax is a little narrowed in front and very convex above. Elytral striae are very fine, with flat intervals. **Female** is slightly larger, the pronotum more convex and more distinctly punctured, the elytra are broad behind, the five dorsal striae very broad and strongly impressed.

Length 12-19 mm.

Distribution: Assam, Myanmar, Thailand (Wiang Pa Pao).

S57. *Peltonotus morio* Burmeister, 1847

แมลงภู่นานดำขาใหญ่

Black and shining, with a clothing of rather long, erect tawny hairs upon the head, sides of prothorax and lower surface. The head is rugosely punctured, the clypeus broadly rectangular. The pronotum is strongly punctured, with the sides strongly rounded, the front angles right angles, the hind angles and the base rounded. The elytra are strongly punctured, some of the punctures forming longitudinal lines. The pygidium is finely punctured and clothed with very long, erect tawny hairs. **Male**, the front tibia is long, the tarsi (except the front ones) much longer than the tibiae. The front tibia bears three short teeth. The tarsus thickened and the inner claws very long and strongly bent near its base. **Female**, all tarsi are shorter than the tibiae, the front tibia broader at its extremity and narrower at its base, with stronger teeth than in the male.

Length 16-19 mm.

Distribution: Nepal, Bhutan, Sikkim, Myanmar, Laos, N. Thailand (Doi Pha Hom Pok).

(1.5 X)



S55. *Parastasia birmana*



S56. *Parastasia sulcipennis*



S57. *Peltonotus morio*

S58. *Peperonota harringtoni* Westwood, 1847

แมลงภู่นหลังแหลม

Body broad and short; head black; pronotum very convex and shining. **Male**, bears a middle lobe behind the pronotum forming a long sharp spine, pointed backwards over the elytra. Elytra are dull reddish-brown, sparsely punctured and tinted with dirty black spots, rather short and convex, entirely covering the abdomen. **Female** without a sharp spine behind the pronotum, scutellum is rounded, smooth and shining

Length 22-25 mm.

Distribution: Sikkim, Assam, Myanmar, N. Thailand (Doi Pha Hom Pok).

(1.5 X)



S58. *Peperonota harringtoni*

FAMILY SCARABAEIDAE

SUBFAMILY CETONIINAE

The members of this family are generally called flower beetles, square metallic wood-boring beetles. They mostly are colorful of various sized. Some of them are metallic green, red, blue or purple, some clothed with pubescence or fine hairs. The peculiar oriental species, *Dicranocephalus wallichii* is commonly known as dragon beetle. Because of its peculiar shaped of horns. The male of these beetles possesses a pair of long curved horns on head, but they are not fighters. Hence horns will be merely attracting devices to the female for mating.

They mostly are pollen feeders and usually found on flowers. Some of them feed in rotten fruits such as mango, guava and rose apple. The mouth-parts are generally adapted for drawing up liquid food, therefore the mandibles are thin and not sharp. While the members of Tribe Cremastocheilini bear strong and sharp mandibles using for biting. They usually found under stones along the stream banks or under the tree barks. Some associate in the nests of ants or termites. They are considered to be nocturnal insects whereas the majority of the members of CETONIINAE are diurnal. The larvae of most of flower beetles feed on organic matter in the soil including animal dung, sometimes feed on young roots, which could be harmful to young plants.



Figure 34. The dragon beetle, *Dicranocephalus wallichii wallichii*, a hairy larva and adults in copulation. The large male form bears a long flattened slender horn, curving forwards and backwards and also long peculiar fore-legs.



Figure 35. The common green-square beetles, *Agestrata orichala orichala*, 1. The first two were in cooperating while the third one has joined the marching, 2. The club antenna is longer than its foot-stalk, with three lamellae.



Figure 36. *Glycyphana horsfieldi*. The larva feeds under tree bark and pupates there (Mae Rim, August 2008).



Figure 37. *Glycyphana nicobarica*, a small deep green species eltron with four spots lying longitudinally in the middle and other four lateral spots on each elytron. They were found feeding on flowers (Kamphaeng Saen).



Figure 38. Thesquare-flower beetles; 1. *Meriloba suturalis* feeding on wild flowers, 2. *Protactia acuminata* feeding on a ripen mango fruit.



Figure 39. The large yellow-spotted square beetle, *Jumnos ruckeri*, male with the fore-legs greatly elongate.

Tribe Cremastochellini

Body is more or less boat-shaped, convex above; posthumeral elytral emargination present; mesepimeron visible from above; labium cup-shaped, one half to three quarters as wide as head.

***Campsiura* (Hope, 1831)**

Body more or less boat-shaped, very compact, convex above, extremely smooth and shining above and beneath; sternal process flat and a little dilated in front of the middle coxae. Male, abdomen strongly arched and longitudinally channeled beneath, hind tarsi longer than in the female.

C1. ***Campsiura gloriosa* (Mohnike, 1871)**

ด้วงดอกไม้้อกแดง

Shining black, with head and pronotum reddish orange, the latter decorated with three small black spots placed in a triangle on each side and the front and hind margins very narrow black.

Length 25 mm.

Distribution: Myanmar, S. Vietnam, N. Thai Land (Mae Rim).

C2. ***Campsiura insignis* (Gestro, 1891)**

ด้วงดอกไม้หัวเหลือง

Black, shining above and beneath, with antennae and the head, except at the sides behind the eyes, bright orange; clypeus nearly straight in front; pronotum punctured at both sides, narrow in front and broad behind; elytra almost smooth, with a sharp jagged carina before the apex; sternal process is very broad and flat.

Length 26-30 mm.

Distribution: Myanmar, N. Thailand (Fang).

C3. ***Campsiura javanica* (Gory & Percheron, 1833)**

ด้วงดอกไม้้อกเหลืองแต้ม

Body is black, except clypeus, both sides of pronotum, scutellum brownish-yellow, smooth and shining above; clypeus small, rather quadrate and rounded in front; pronotum large at base, tapering in front; elytra fairly finely punctured, rather smooth and shining.

Length 17-18 mm.

Distribution: India, Sri Lanka, Myanmar, Vietnam, Malaysia, Indonesia, Thailand (Chiang Mai, Nakhon Pathom, Phetchaburi).

***Clinterocera* Motschulsky, 1857**C4. ***Clinterocera jucanda* (Westwood, 1873)**

ด้วงดอกไม้หัวมีส้ม

Dull black, clothed densely with pubescence orange on elytra, forming a large U-shaped marking above, except a small window behind scutellum; body elongated, legs stout and short, the lower surface strongly punctured; clypeus broad at base and rounded in front; pronotum rather rounded at sides, strongly granulated above; elytra strongly punctured and rugose near apical margins. Male has a shorter U-shaped marking than the female.

Length 22-24 mm.

Distribution: N. Vietnam, N. Thailand (Fang, Doi Inthanon, Wiang Pa Pao).

(1.1 X)



♀

(after Sakai & Nakai)
C1. *Campsiura gloriosa*



♂



♀

C2. *Campsiura insignis*



♂



♀



♀



♂ △

C3. *Campsiura javanica*

(1.7 X)



♂



♀



♂ △

C4. *Clinterocera jucanda*

Coenochilus Schaum, 1841

Body very elongate and more or less narrow-waisted, protorax hexagonal shaped, narrow in front and at base, rounded at sides; clypeus broadly dilated and rounded angles.

C5. **Coenochilus apicalis** Westwood, 1873

ด้วงดอกไม้หมี่ดำ

Entirely black, elongate; slight shining; clypeus short, rather quadrate and bilobed in front; mandible each with two sharp teeth adapted for biting; pronotum moderately punctured; elytra strongly punctured, with four longitudinal ridges, the 3rd rising obliquely from humeral angle and joining with the 2nd in the middle of each elytron.

Length 16 mm.

Distribution: Confined to N. Thailand (Doi Pha Hom Pok, Phrao, Sansai).

Cymophorus Kirby, 1828C6. **Cymophorus pulchellus** Arrow, 1910

ด้วงดอกไม้หมี่ดำสีแถบแดง

Shining black, with two large bright red patches of quadrate shaped upon each elytron, placed one before the middle and the other behind it.

Length

Distribution: S. Vietnam, N. Thailand (Chiang Mai).

Goliathopsis Janson, 1881

Black very velvety clothing. **Male**, the cephalic horns are parallel or slightly divergent, curving upwards and forwards, blunt at the end, with a short external branch beyond the middle. **Female**, the horns are represented by slight prominences above the eyes.

C7. **Goliathopsis duponti** Antoine, 1991

ด้วงดอกไม้เขาดำ

Black, fairly finely clothed with brownish-velvety above, but densely at sides and at thoracic sternum; **Male**, head bears a pair of moderately long, flattened horns; pronotum and elytra strongly punctured, the latter with brownish spots at lateral sides, near the suture and near apices. Scutellum is black and unmarked. **female**, head strongly punctured, without horns.

Length 10-11 mm.

Distribution: Confined to N. Thailand (Mae Tha).

C8. **Goliathopsis ferreroi** Antoine, 1991

ด้วงดอกไม้เขาสวน

Similar to the preceding species, but lighter coloring, pronotum with a brownish median line extends to scutellum. **Male**, head bearing a pair of similar horns as in the former species; pronotum with a longitudinal brownish stripe at median line and two broad stripes at lateral margins; elytra with brownish spots at lateral margins, near the suture and near the apices. **Female**, head strongly punctured, without horns.

Length 10-12 mm.

Distribution: Confined to N. Thailand (Mae Tha, Doi Pui).



C5. *Coenochilus apicalis*



(after Sakai & Nakai)

(Pitsanuloke)

C6. *Coenochilus curtipes*



C7. *Goliathopsis duponti*

C8. *Goliathopsis ferreroi*

Tribe Schizorhinini***Agestrata*** Eschscholtz, 1829

- C9.
- Agestrata orichalca orichalca***
- (Linnaeus, 1769)

แมลงทับเหล็กมรกต

Dark metallic green, the lower surface of the body metallic green suffused with coppery-red at meso-sternum and abdomen; body long, narrow and flat; clypeus strongly angulated: pronotum and elytra very smooth and shining; the club antenna longer than its foot-stalk in both sexes and considered longer in male than in the female.

Length 36-50 mm.**Distribution:** China, Myanmar, Malaysia, Indonesia and Thailand (Yala, Chiang Mai).***Thaumastopeus*** Kraatz, 1883

Body elongate and very flat, smooth, shining and naked; clypeus long and very deeply cleft, with sharp angles.

- C10.
- Thaumastopeus pugnator***
- Heller, 1899

Thaumastopeus pugnator arrowi Allard, 1995

ด้วงดอกไม้เขียวแหลม

Bright metallic green above and below, very smooth and shining. Clypeus is deeply cleft, with sharp angles. Sternal process is strong, curved and rather sharp.

Length 32 mm.**Distribution:** Confined to N. Thailand (Mae Taeng).

- C11.
- Thaumastopeus nigritus***
- (Fröhlich, 1792)

ด้วงดอกไม้ดำแหลม

Entirely black, smooth and shining, rather elongate and flat; meso-sternal process narrow and tapering in front, slender and curving backwardly; clypeus strongly cleft, with sharp angles, rugosely punctured; pronotum finely punctured at sides; elytra very smooth at the inner part, finely rugose at sides and apices; sternal process is slender and curved.

Length 27-28 mm.**Distribution:** India, Myanmar, Laos, Java, Malaysia and N. Thailand (Wiang Pa Pao).**Tribe Goliathini**

Pronotum lacking basomedian lobe, scutellum visible. mesepimeron distinct. Posthumeral emargination slight. Elytra glabrous or velutinous. middle coxae usually widely separated by mesometasternal process. Head of males bear strong clypeal projections.

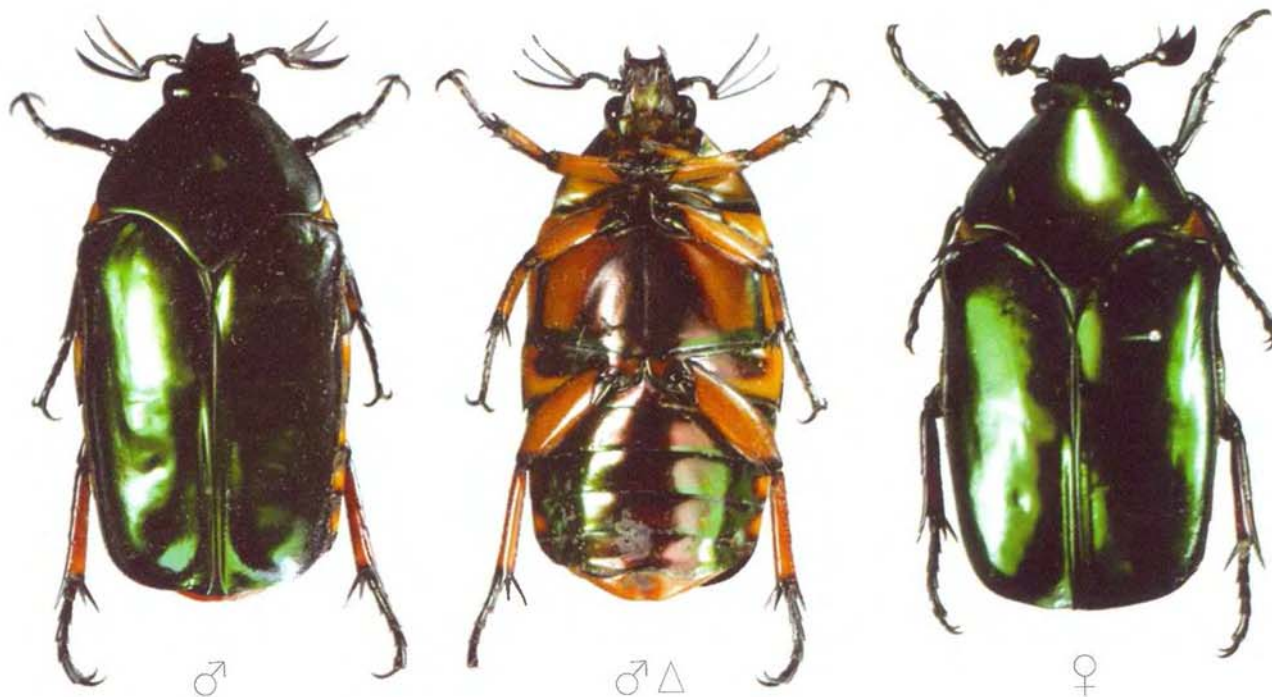
Anomalocara Westwood, 1842

- C12.
- Anomalocara subopaca subopaca***
- Arrow, 1907

ด้วงดอกไม้เขียวลายริ้ว

Green with slight opalescence orange-yellow reflection above; clypeus rather square, granulated above; pronotum strongly punctured, but shining; scutellum moderately punctured; elytra with transverse rugose and a few weak longitudinal ridges. **Male**, front tibiae are small, slim, green colored. **Female**, front tibiae are larger than in the male and bear two sharp teeth externally.

Length 21-22 mm.**Distribution:** India to N. Thailand (Wiang Pa Pao).



C9. *Agestrata orichalca orichalca*



(after Sakai & Nakai)

C10. *Thaumastopeus pugnator arrowi*

C11. *Thaumastopeus nigritus*

(1.4 X)



C12. *Anomalocara subopaca subopaca*

C13. *Dicheros bicornis siamensis*

***Dicheros* Gory & Percheron, 1833 (= *Diceros*)**

Body very smooth, moderately convex, long and narrow, distinctly tapering from shoulder to apex. Male, the abdomen is deeply grooved throughout its length, front tibiae simple with only a very feeble upper tooth. Female, the front tibiae are bidentate.

C13. ***Dicheros bicornis* (Latreille, 1817)**

***Dicheros bicornis siamensis* Nagai, 1998**

ด้วงดอกไม้บ้านเหลืองเขา

Entirely black, except red at base of pronotum and a broad square yellow patch on each elytron. Male, clypeus bears a pair of long pointed spoon-shaped horns at tip. Female, clypeus is bidentate. without horns.

Length 19-29 mm.

Distribution: Malaysia, Thailand (Mae Taeng).

C14. ***Dicheros inermiceps* Bourgoïn, 1917**

ด้วงดอกไม้บ้านเหลือง

Entirely black, except a pair of broad rectangular yellow patches on elytra, very smooth and shining; clypeus rather quadrate, marginated and with a middle longitudinal ridge; pronotum rounded at sides, convex above and narrow at front; elytra long and rounded at apices.

Length 15-17 mm.

Distribution: Vietnam and Thailand (Mae Taeng, Phetchaburi).

***Dicranocephalus* Hope, 1831**C15. ***Dicranocephalus wallichii wallichii* (Hope, 1831)**

ด้วงมังกรเหนือ

Body reddish-black, but clothed upon the sides of head, pronotum, elytra and sides of sternum with pubescence greenish-yellow, leaving black as follows: two slightly curved longitudinal ridges on pronotum, the elytral suture, lateral margin and a short stripe from humeral angle to humeral callus and apical callus of each elytron. Male, head bearing a long flattened slender horn, curving forwards and backwards; pronotum convex and strongly narrow in front, abdomen completely covered by elytra. Female, head without horn, coarsely punctured, clypeus strongly excised in the middle-front.

Length (without horn) 22-28 mm.

Distribution: India, Myanmar and N. Thailand (Doi Pha Hom Pok, Wiang Pa Pao).

***Euchloropus* Arrow, 1907**C16. ***Euchloropus laetus* (Fabricius, 1801)**

ด้วงดอกไม้จุดหาง

Bright green including legs, except tarsi partially green and black, strongly punctured above, under surface of body and legs. Clypeus is rather rectangular, broader than long, coarsely punctured, margin straight, angles fairly sharp and without a median carina. Pronotum is strongly punctured, but shining. Elytra bear 6 to 8 punctured dot-lines, the punctures pigmented with black.

Length 18-23 mm.

Distribution: India, Myanmar, Malaysia, Indonesia, Thailand (Mukdahan, Doi Inthanon).

(1.7 X)



C14. *Dicheros inermiceps*

(1.5 X)



C15. *Dicranocephalus wallichii wallichii*



C16. *Euchloropus laetus*

Heterorrhina Westwood, 1842

Form variable, but generally elongate, tapering and depressed, with rather slender legs; very shining and free from hairs above and beneath. Male, front tibiae are slender and unarmed. Female, front tibiae are bidentate.

C17. ***Heterorrhina leonardi*** Gestro, 1891

ด้วงดอกไม้เขียวลิโอ

Grass green with gray reflection, rather smooth and shining; clypeus quadrate, broadly and closely punctured, sides and front margins slightly elevated, the forehead bearing a semicircular horizontal lobe; pronotum strongly punctured in the middle; elytra with three to four punctured dot-lines, between the suture and the 1st ridge and between the 1st and the 2nd ridge, sides and apices very rugose above.

Length 22-23 mm.

Distribution: Myanmar and N. Thailand (Wiang Pa Pao).

C18. ***Heterorrhina micans*** (Guérin, 1840)

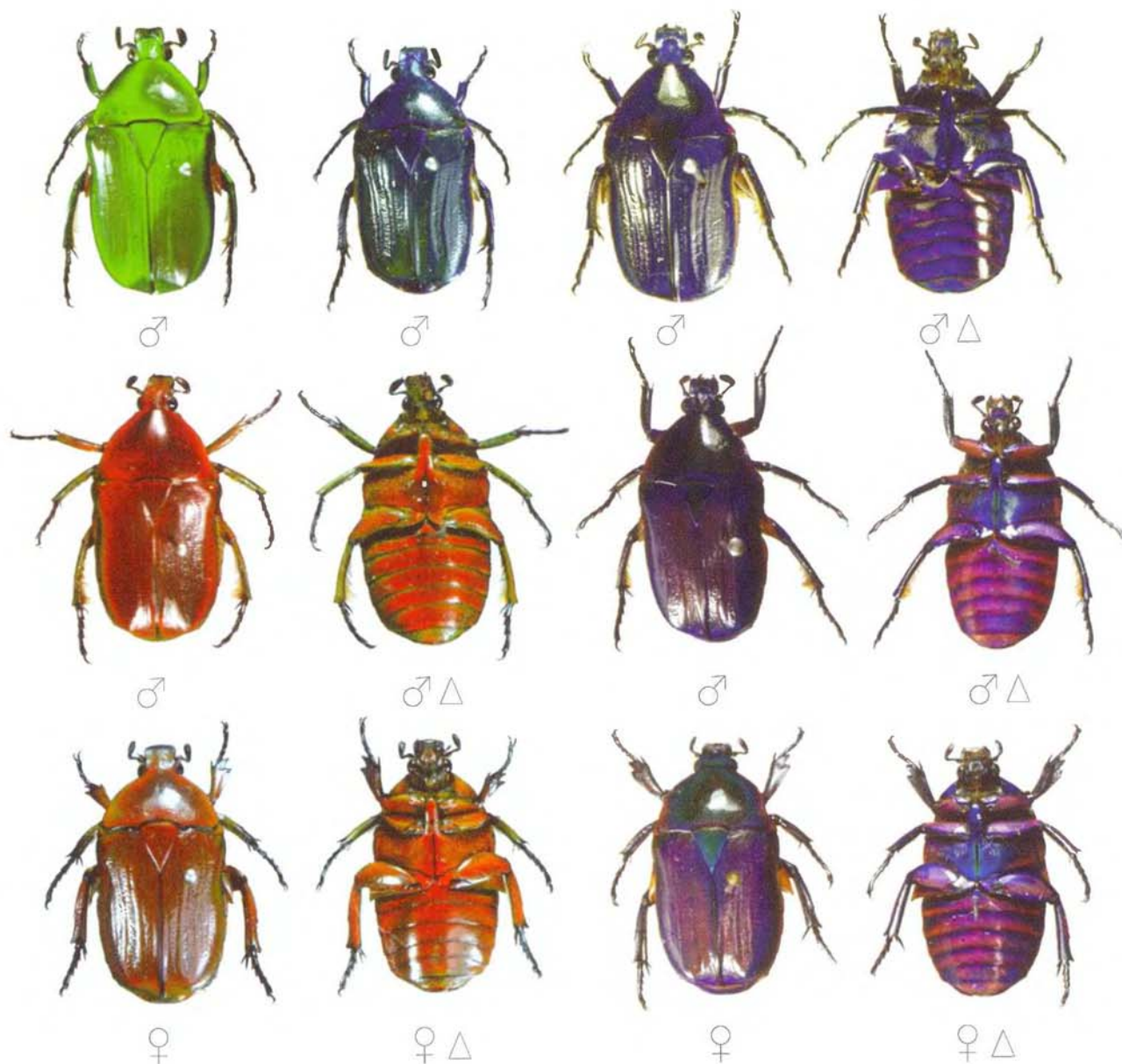
ด้วงดอกไม้หน้ายาว

Shining grass-green, clypeus is rather straight and produced upwards in the middle front, with a frontal carina, horizontally produced in front. Pronotum is fairly lightly punctured except the middle. Scutellum is almost unpunctured. Elytra bear 7 or 8 dot-lines and finely punctured above.

Length 22 mm.

Distribution: S. India to Thailand (Phetchaburi, Samoeng).

(1.5 X)



C17. *Heterorrhina leonardi*



C18. *Heterorrhina micans*

Ingrisma Fairmaire, 1893

Body elongate and depressed; clypeus long, angularly dilated in front, with the front margin rounded; sternal process rather slender, strongly bent downwards, flattened and blunt. **Male**, front legs are longer and more slender, tibiae without teeth externally; hind tibiae fringed with golden hairs. **Female**, tibiae are broader and bidentate; hind tibiae scarcely fringed.

C19. ***Ingrisma bilobiceps*** (Bourgoin, 1917)

ด้วงดอกไม้ทองหัวโหนก

Body elongate and depressed. Clypeus is long, with the front margin rounded and reflexed, expanded at middle of both sides. Prothorax is more or less triangular, scutellum short acutely pointed, elytra strongly punctured except two smooth longitudinal costae on each elytron. Male front legs are long and slender, tibiae reddish, without teeth externally. Female, body is slightly shorter than the male, front tibiae broad and bidentate.

Length 23-27 mm.

Distribution: Confined to N. Thailand (Nan).

C20. ***Ingrisma burmaica*** Mišić, 1977

ด้วงดอกไม้ทองพม่า

Green and slight opalescence orange-yellow reflection, smooth and shining; clypeus rather long, angularly dilated, the front margin elevated and rounded, strongly punctured above; pronotum with finely punctured at sides; elytra scarcely punctured, mostly at sides.

Length 19-26 mm.

Distribution: Myanmar and N. Thailand (Doi Pui, Chiang Dao, Wiang Pa Pao).

C21. ***Ingrisma euryrhina*** (Gestro, 1891)

ด้วงดอกไม้ทองดอย

Bright red or greenish with red suffusion above and the lower surface including legs; greatly varying in colored, either blue, bluish-green, bluish-purple, brown or black; clypeus rather long, angularly dilated in front, the front margin elevated and rounded; rugosely and strongly punctured; pronotum more or less triangular, moderately punctured, smooth and shining.

Length male 26-27 mm, female 23-25 mm.

Distribution: Myanmar and N. Thailand (Wiang Pa Pao).

(1.5 X)



♂

(after Sakai & Nakai)
C19. *Ingrima bilobiceps*



♂



♀



♀



♀ △

C20. *Ingrisma burmaica*



♂



♂



♂



♂



♂



♂



♀



♀

C21. *Ingrisma euryrrhina*

Jumnos Saunders, 1839

This genus contains the largest beetles of this family. The front legs in male are greatly elongated while those of the female are shorter.

C22. ***Jumnos ferreroiminettii*** Antoine, 1991

แมลงทับเหล็กขมหลวง

Deep metallic green, with coppery red suffusion above, smooth and shining, a large species of the northern highlands. **Male**, clypeus rather long, dilated in front, strongly granulated above, with an irregular tooth ridge at each side, a sharply tridentate ridge in front, a sharply pointed tooth at the front angles; pronotum very convex, the posterior angles sharply rectangular; elytra without large yellow spots; the front legs greatly elongated, tibia strongly tuberculated beneath. **Female**, clypeus more simple without sharply pointed tooth at front angles; front legs shorter than those of the male.

Length male 44-48 mm, female 37-42 mm.

Distribution: Confined to N. Thailand (Doi Pha Hom Pok).

C23. ***Jumnos ruckeri ruckeri*** Saunders, 1839

แมลงทับเหล็กขมจุดเหลือง

Deep metallic green, smooth and shining, elytra with two large orange-yellow spots, one at the front half and the other larger one on the posterior half; clypeus rather long, rugose above, the sides straight and slightly diverging towards the front, front margin nearly straight; pronotum strongly convex, the posterior angles sharply rectangular. **Male**, the front legs greatly elongated, tibia strongly tuberculated beneath.

Female, front legs short and tibia without tubercles beneath.

Length male 39-55 mm, female 38-45 mm.

Distribution: India to N. Thailand (Doi Inthanon, Tak).



C22. *Jumnos ferreroiminettique*

C23. *Jumnos ruckeri ruckeri*

Platynocephalus Westwood, 1854

Prothorax is about as broad as long, distinctly narrower than the elytra across the shoulders and almost parallel-sided behind. Male, clypeus with a pair of protruding horns; tibiae are longer, with two teeth. Female clypeus without horns; tibiae are shorter, broad and armed with three similar oblique teeth.

C24. ***Platynocephalus arnaudi*** Delpont, 1995

ด้วงมั่งกรกาญจน์

Brownish, except the inner part of elytra greenish-yellow, smooth and shining, the lower surface reddish, except femur brownish, tibia, tarsi and claws black. **Male**, head with a pair of curved horns, projecting parallelly forwards and upwards, with two triangular teeth pointed upwards at apex and at middle of each side; pronotum moderately convex; elytra with well marked dot-lines; front legs greatly elongated, front tibia with two teeth at outer margin. **Female**, clypeus quadrate, deeply excavated in the middle and slightly marginated, with two small prominent teeth between eyes, pointed forwards, strongly punctured, without horns; front legs short, front tibia with three outer teeth.

Length male 30 mm, female 21 mm.

Distribution: Confined to W. Thailand (Khao Kala - Kanchanaburi).

C25. ***Platynocephalus miyashitai*** Delpont, 1995

ด้วงมั่งกรเขาเคียว

Brownish above, except the inner part of elytra greenish-yellow, another black form with darker brown to black on pronotum, scutellum and lateral sides of elytra in both sexes. **Male**, head bears a pair of curved horns, diverging in front, projecting upwards and backwards; pronotum moderately convex; elytra with well marked dot-lines; front legs greatly elongated, front tibia black, except near the apical end partly yellow, tarsi yellow, black at the apical end of each segment, claws black. **Female**, clypeus is quadrate, strongly punctured, without horns; front legs also short.

Length male (without horn) 23 mm, female 20mm.

Distribution: Confined to N. Thailand (Mae Suay, Omkoi).

(1.4 X)



♂



♀



♂

C24. *Platynocephalus arnaudi*



♂



♂



♀



♀



♂



♀

C25. *Platynocephalus miyashitai*

Rhomborrhina Hope, 1837

Body is elongate, rather flattened above, generally smooth and shining; head flat, without frontal process. Male, the front tibiae are slender and unarmed. Female, the front tibiae are broader and bidentate externally.

C26. ***Rhomborrhina jeanneli*** Ruter, 1965

ด้วงดอกไม้ดำหัวดัด

Entirely black, smooth and shining, fringed with golden-yellow hairs at sides of the body, the tip of abdomen and beneath the mid and hind tibiae; clypeus rather quadrate, strongly punctured and nearly straight in the front margin; pronotum sparsely punctured at front margins; elytra very smooth, strongly rugose near the bases; pygidium rugose.

Length 35 mm.

Distribution: Confined to N. Thailand (Doi Pha Hom Pok).

C27. ***Rhomborrhina mellyi mellyi*** (Gory & Percheron, 1833)

ด้วงดอกไม้เขียวทอง

Bright apple green, with orange-yellow reflection above and specially the lower surface; with tarsi and antennae black; sternal process narrow, parallel sided and rounded at apex; clypeus square, finely rugose; pronotum fairly finely punctured, smooth and shining; elytra moderately rugose at sides and near apices, but slight shining; pygidium not darker colored and fringed with very fine hairs.

Length 29-30 mm.

Distribution: Laos, N. Thailand (Mae Taeng, Wiang Pa Pao, Nan).

C28. ***Rhomborrhina resplendens*** (Swartz, 1817)

ด้วงดอกไม้สามเหลี่ยมดำ

Bright golden-green, smooth and shining, elytra with black triangular bands along scutellum borders; legs darker, nearly black above; sternal process not dilated in front; clypeus large and elongated, not abruptly dilated in front, densely and rugosely punctured; pronotum fairly finely punctured; elytra sparsely punctured in the middle, coarsely rugose at sides and near apices, with a broad dark green stripe at base, along the scutellum and over the suture; pygidium fringed with very few short hairs.

Length 34-40 mm.

Distribution: India, China, N. Vietnam and N. Thailand (Wiang Pa Pao).



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♀ △

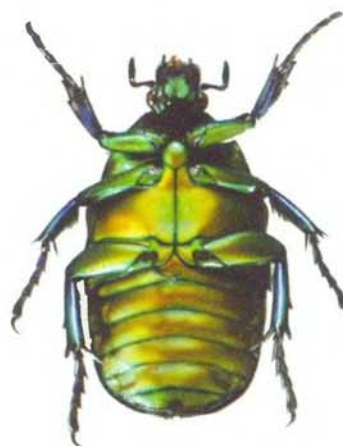
C26. *Rhomborrhina jeanneli*



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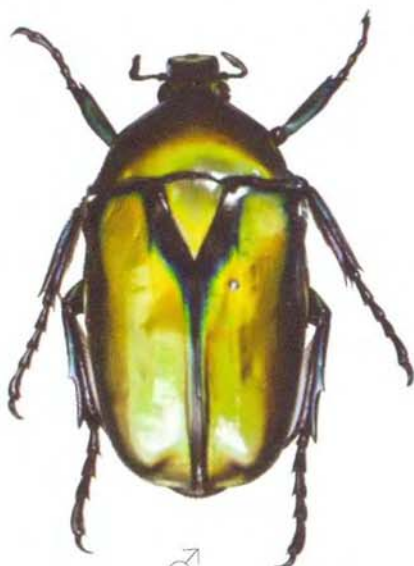


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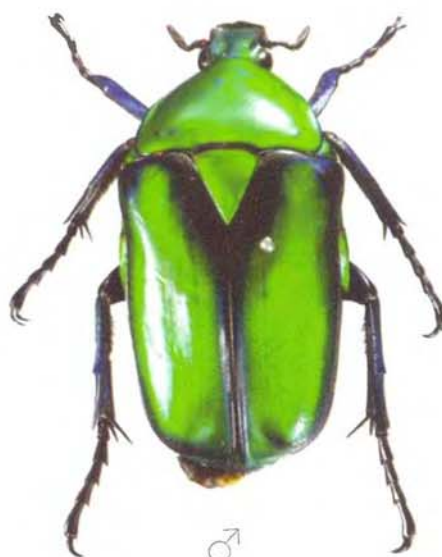


♀ △

C27. *Rhomborrhina mellyi mellyi*



♂



♂

(N. Vietnam)



♀

(Wiang Pa Pao)

C28. *Rhomborrhina resplendens*

Trigonophorus Hope, 1831

Body depressed, elongate and naked, with moderately slender legs; head broad, excavated, the forehead armed with an horizontal lobe directed forwards; clypeus bearing at the middle of the front margin a triangular horn curving forwards and upwards, slender at base and broader at the extremity. **Male**, legs are slender and the front tibiae are unarmed. The posterior cephalic horn is generally acute. **Female**, legs are stouter, front tibiae broad and bidentate. The posterior cephalic horn is generally blunt.

C29. ***Trigonophorus feae*** Gestro, 1891

ด้วงดอกไม้หัวซ้อนสั้น

Bright green, with the tibiae and sides of hind coxae red, the tarsi black; body form is rather broad. sternal process is very slender, sharply pointed and nearly straight. **Female**, clypeus is rather short, closely granulated, excavated, with the sides curved and not much elevated; the posterior process is strongly dilated

Length 25 mm.

Distribution: Myanmar, N. Thailand (Omkoi).

C30. ***Trigonophorus foveiceps*** Gestro, 1888

ด้วงดอกไม้หัวซ้อนปากคืบ

Pea-green, very smooth and shining, femur green, tibia black or red with black at apical end, tarsi black; clypeus granulated above, rather quadrate, moderately dilated in front and with front process extending from the middle; pronotum finely punctured, with a front process, moderately dilated, nearly rounded or slightly angulated; elytra with finely punctured dot-lines; front tibia slender, with small apical tooth.

Length (without front process) 22-26 mm.

Distribution: Myanmar and N. Thailand (Doi Pui, Doi Inthanon, Wiang Pa Pao).

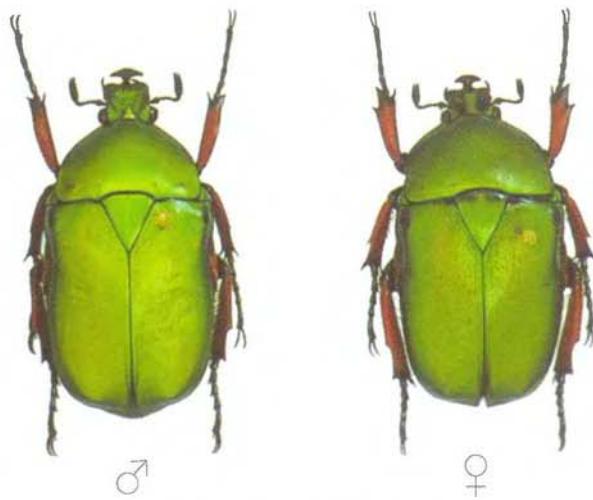
C31. ***Trigonophorus nepalensis*** Hope, 1831

ด้วงดอกไม้หัวซ้อนเนปาล

Deep green or blue-green, moderately shining, with lower surface dark, the femora, tibiae and hind coxae orange-red without any suffusion of green, and the tarsi black. **Male**, posterior cephalic process is long and acuminate, prothorax narrow in front. **Female** posterior cephalic process is truncated and dilated in front, anterior process short; prothorax is more transverse.

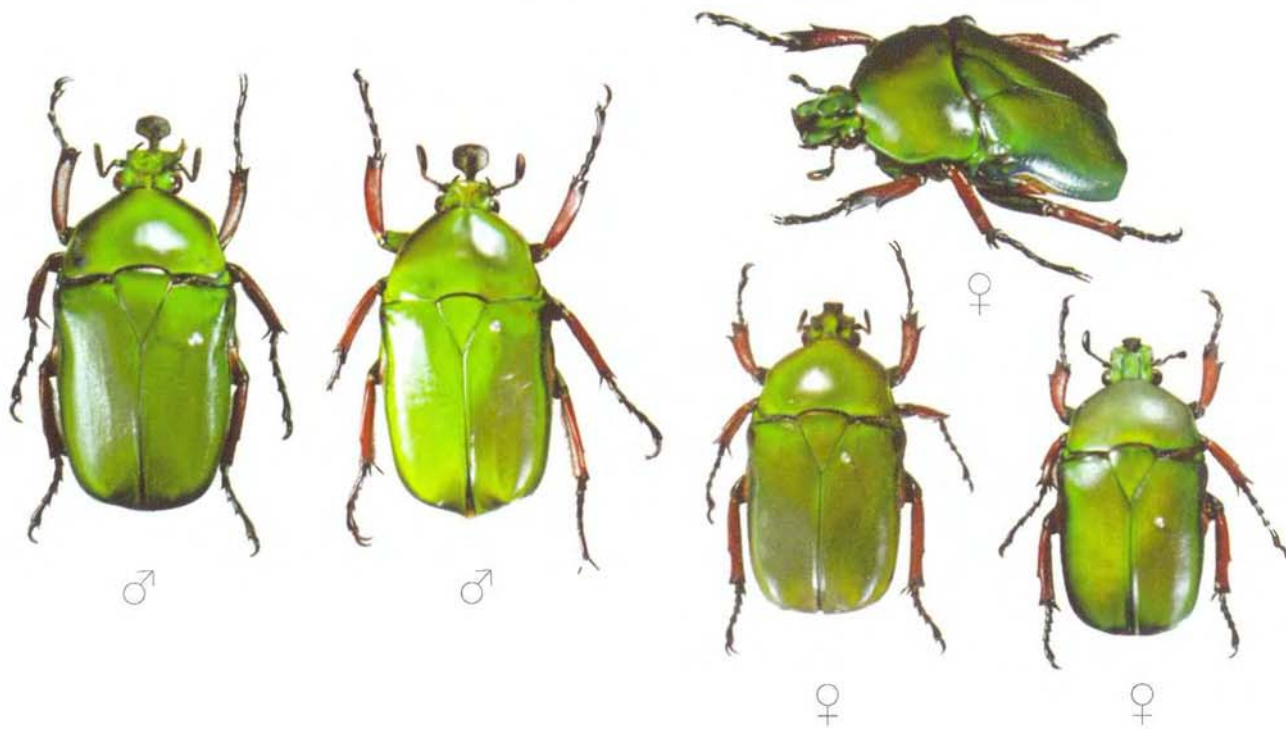
Length 28-32 mm.

Distribution: Bhutan, Sikkim, Assam, N. Myanmar, N. Thailand (Doi Pha Hom Pok).



(after Sakai & Nakai)

C29. *Trigonophorus feae*



C30. *Trigonophorus foveiceps*



C31. *Trigonophorus nepalensis*

Torynorrhina Arrow, 1907

Body is elongate and depressed; clypeus simple, rather long, gradually dilated towards the front, with the front margin regularly rounded; sternal process well developed, broad, dilated, transverse in front and form by meso-sternum and meta-sternum together. Male, front tibiae are slender and unarmed. Female, front tibiae are broader and armed with two sharp oblique teeth.

C32. *Torynorrhina distincta* (Hope, 1841)

ด้วงดอกไม้ทองใหญ่

Bright grass green to golden green, smooth and shining; lower surface of the body and legs deeply green or bluish-green; sternal process strongly dilated in front; clypeus long, abruptly dilated in front, densely and rugosely punctured; pronotum fairly finely punctured; elytra irregular and rather coarsely punctured, coarsely rugose at sides and near apices, posterior margin of elytra not sharply defined, pygidium nearly black and hairy.

Length 29-33 mm.

Distribution: India, Myanmar, Laos and N. Thailand (Wiang Pa Pao).

C33. *Torynorrhina flammea flammea* (Gestro, 1888)

ด้วงดอกไม้แฟนซี

Metallic green, vertex, pronotum, scutellum and elytra suffused with orange above; the lower surface bluish-green including femora, tibiae black; another blue-colored form, entirely metallic greenish-blue to purplish-blue above and the lower surface including legs except black tarsi; densely fringed with fine black hairs at sides of the body, pygidium and the lower surface at mid and hind tibiae; clypeus rather long, gradually dilated towards the front, front margin regularly rounded, granulated above; pronotum shining; elytra strongly punctured, rather smooth and shining; the two sexes having both colored forms.

Length 30-34 mm.

Distribution: Myanmar and N. Thailand (Doi Pha Hom Pok, Wiang Pa Pao, Doi Phu Kha).

(1.2 X)



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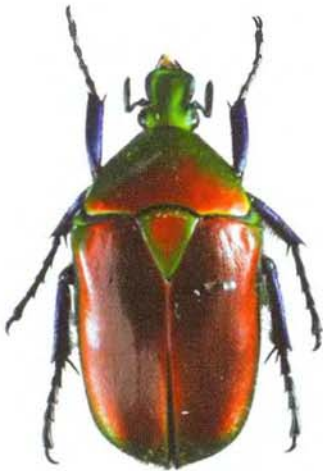


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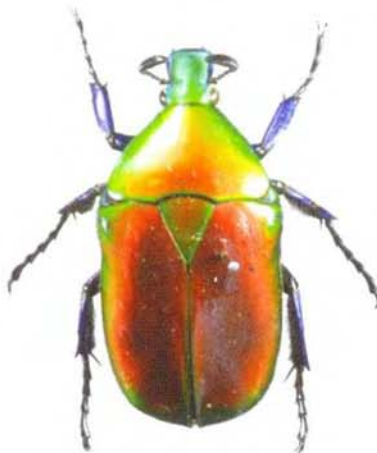
C32. *Torynorrhina distincta*



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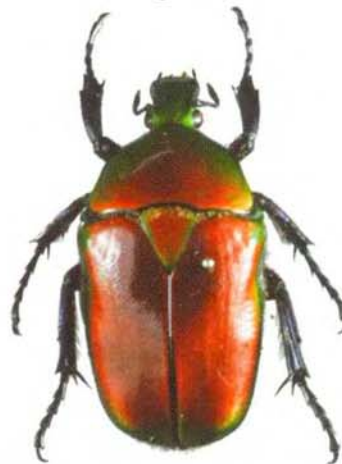
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C33. *Torynorrhina flammea flammea*

C34. *Torynorrhina thiemei* (Moser, 1901)

ด้วงดอกไม้สีซีม้าปลายขน

Reddish-green or reddish brown colored. Clypeus is almost square, marginate at front and sides. Pygidium bears reddish-yellow hairs. Male, front tibiae are slim and slender, without external teeth. Female front tibiae are larger towards the apical end.

Length 24-27 mm.

Distribution: N. Vietnam, Laos, N. Thailand (Doi Phu Kha, Doi Pha Hom Pok, Wiang Pa Pao).

Tribe Cetoniini

Posthumeral elytral emargination present; mesepimeron visible from above; labium not enlarged or cup-shaped, less than half as wide as head.

Cetonia Fabricius, 1775

Clypeus bilobed, not reflex in front, head with two pits between the eyes, separated by a narrow ridge. **Male**, spur of the hind tibia is slightly sharp. **Female**, inner spur of the hind tibia stout and broadly truncate, last ventral segment more closely punctured than in the male.

C35. *Cetonia rutilans* (Janson, 1881)

ด้วงดอกไม้มรกตขีดขาว

Deep metallic green, elytra with two well marked costae on each elytron and two transverse rows of white spots at posterior half, some scattered white spots at side and one at apex of each elytron; pronotum strongly punctured, with the sides strongly margined; elytra strongly punctured, the sides strongly sinuated behind the shoulders.

Length 20-21 mm.

Distribution: Nepal, India to N. Thailand (Chiang Dao, Fang).

Gametis Burmeister, 1842

Body form is ovate and moderate compact; clypeus rather long, tapering, cleft at the end and without the reflexed margin; mesosternal process short, rounded in front but scarcely dilated as in *Glycyphana* and *Protaetia*. The last ventral segment is punctured in the female and smooth in the male, the spurs of hind tibia are shorter and sharper in the latter.

C36. *Gametis bealiae* (Gory & Percheron, 1833)

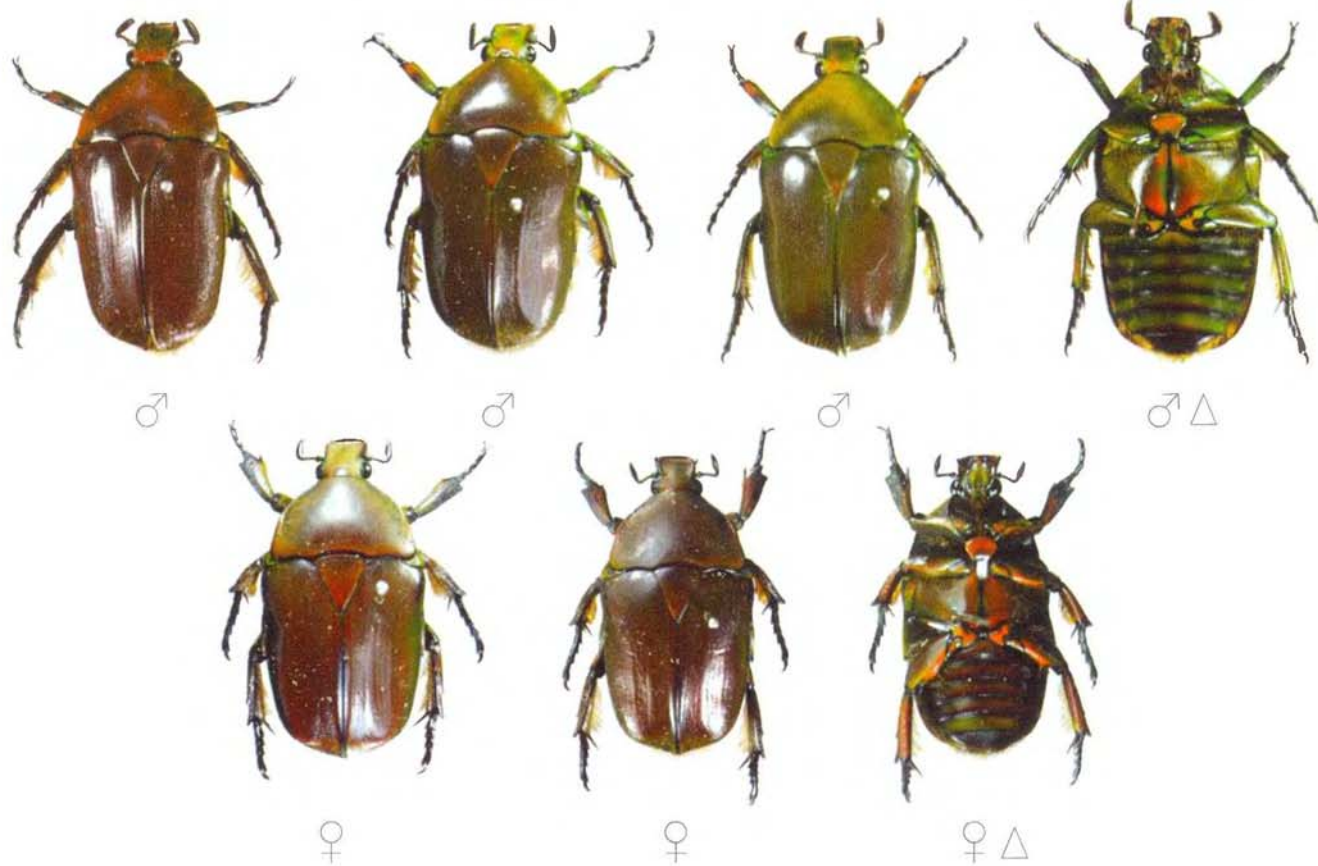
ด้วงดอกไม้ลายหุ่นยนต์

Normally black and orange-red, with yellow markings; lower surface black and shining; clypeus bilobed in front, strongly punctured; pronotum orange-red, with a pair of large black patches at both sides of median line; elytra black, with a broad transverse band across the middle orange, except the suture, and with a yellow lateral spot behind the band. Sexes are similar, but the male has the spurs of hind tibiae shorter and sharper than the female.

Length 14-16 mm.

Distribution: S. China, Laos and N. Thailand (Wiang Pa Pao, Nan).

(1.2 X)



C34. *Torynorrhina thiemei*



C35. *Cetonia rutilans*



C36. *Gametis bealiae*



C37. *Gametis histrio* (Olivier, 1789)

ด้วงดอกไม้หุ่นไม้งาม

Dull green or orange-red, with various colored forms, markings with white: pronotum with a lateral stripe at each side; elytra with a minute spot at sinuated margin and two lateral spots at behind the shoulder and at two-thirds from the base, three spots close to the suture at middle, posterior half and near apex of each elytron; pygidium with a pair of spots; clypeus brown, bilobed in front, densely punctured; pronotum and elytra sparsely punctured; the lower surface brown and shining.

Length 12-16 mm.

Distribution: Myanmar, Thailand (Wiang Pa Pao, Samoeng, Khon Khaen).

Glycosia Schoch, 1896

Form flattened, rather broad at the shoulder; head rather small, with the clypeus bilobed and not reflexed at the front margin; elytra strongly sinuated behind the shoulders; sternal process prominent, rather compressed and generally directed obliquely downwards. **Male**, the prothorax is broader at base and the spurs of hind tibiae are more slender and acute.

C38. *Glycosia tricolor tricolor* (Olivier, 1789)

ด้วงดอกไม้วงแดงบานใหญ่

Black, with the head, legs and lower surface shining. Prothorax is blood-red at lateral margin and sometimes also the hind margin, black in the middle. Elytra are black, each elytron decorated near the middle with a large pale yellow patch, irregularly in triangular shape. Male, the front tibiae and hind tarsi are a little more slender than in the female.

Length 17-20 mm.

Distribution: Sikkim, Bhutan, Sri Lanka, N. Thailand (Doi Saket, Wiang Pa Pao).

Glycyphana Burmeister, 1842

Body elongate, very depressed, not much tapering behind, with the legs rather short; clypeus bilobed; front tibiae tridentate in both sexes. The sexes frequently differ in their coloration. Some of them have several color forms.

C39. *Glycyphana catena* Arrow, 1910

ด้วงดอกไม้วงแดงรูปโซ่

Velvety-black, with the clypeus, legs and lower surface shining, pygidium, the lateral and posterior margins of prothorax are blood-red. Elytra transversed at the middle by a chain of six creamy yellow spots, those at the outer edge are the largest, the rest small or absent.

Length 14-15 mm.

Distribution: Bhutan, Sikkim, N. Thailand (Fang).

C40. *Glycyphana chamnongi* Antoine, 1991

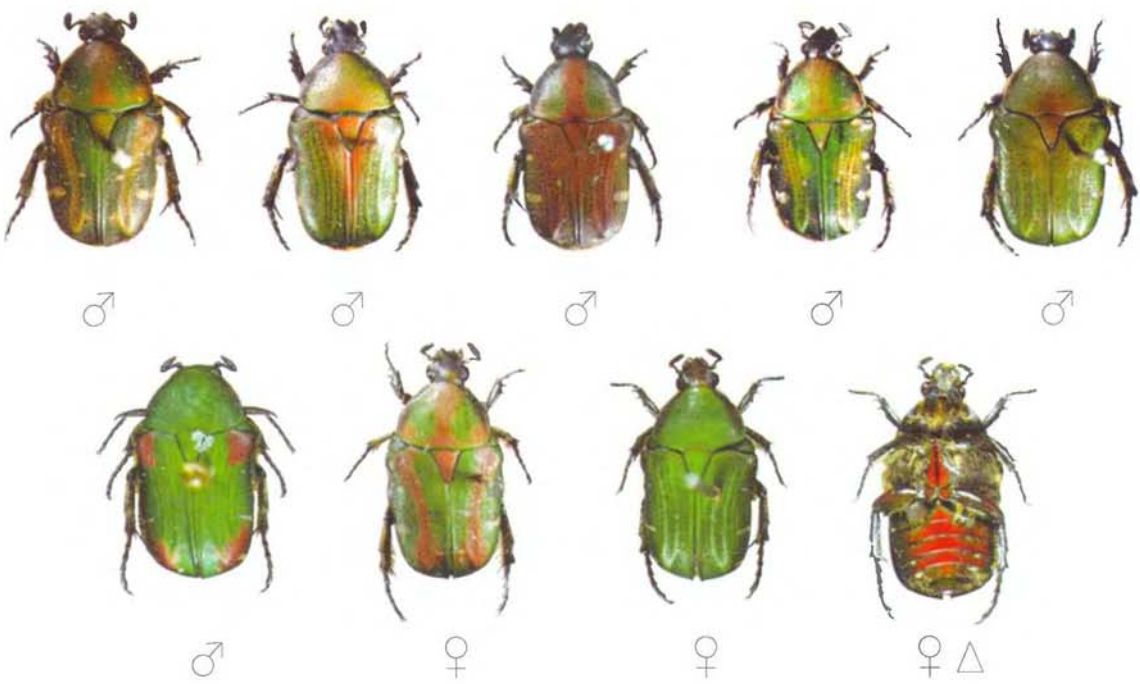
ด้วงดอกไม้ข้างแดงจำนงค์

Clypeus is bilobed. Elytron with a large spot at middle closed to the lateral margin, with creamy spots at the outer edge, lower angle and the inner edge of the red spot. **Male**, hind tibiae are more slender than those of the female. The insect is an endemic species and confined to the North of Thailand especially at Mae Taeng area in Chiang Mai. It is a very rare insect and no one sees it again until now.

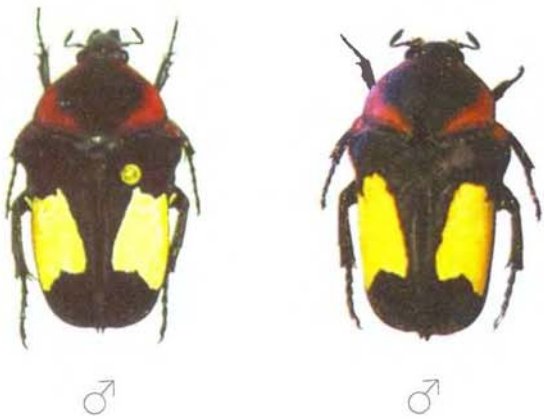
Length 9-11 mm.

Distribution: Confined to N. Thailand: 1 male, 3.VI.1993, Mae Taeng, Chiang Mai; 2 female, V.1988, Chiang Mai are recorded by Kaoru Sakai and Shinji Nagai (1998).

(1.7 X)



C37. *Gametis histrio*



(after Sakai & Nakai)

C38. *Glycosia tricolor tricolor*



(after Sakai & Nakai)

C39. *Glycyphana catena*

C40. *Glycyphana chamnongi*

C41. *Glycyphana fadilae* Mikšić, 1967

ด้วงดอกไม้วงแดงจุดเสริม

Black, pronotum with a red oval-shaped marking at lateral margins and the base except the median area remaining black; elytra black, with four yellow rectangular-spots at behind the middle; clypeus bilobed in front, granulated above.

Length 13-14 mm.

Distribution: N. Vietnam, W. Malaysia, N. Thailand (Mae Taeng, Wiang Pa Pao).

C42. *Glycyphana festiva* (Fabricius, 1792)

ด้วงดอกไม้แถบเหลืองยาว

A malayan species, occurs also in the peninsular Thailand. It is deep green, with a broad yellow-longitudinal stripe at the middle of each elytron, non-shining above. Clypeus is black, rather square, finely granulated. Pronotum is angulated at hind angles.

Length 14 mm.

Distribution: Myanmar, W. Malaysia, Indonesia, Thailand (Songkhla).

C43. *Glycyphana horsfieldi* (Hope, 1831)

ด้วงดอกไม้วงแดงเดี่ยว

Black, with red pronotal borders and a broad transverse band across the middle of elytra, rather narrow near the suture and not reach the suture. Clypeus is bilobed in front, strongly punctured. Pronotum is velvety black, with red borders. Elytra bear strong depressed dot-lines and unusual transversed band. I have seen a specimen from Chonburi with very narrow transverse band similar to the species identified from Tam Dao, N. Vietnam *G. aurosincta*.

Length 15-17 mm.

Distribution: Nepal, Sri Lanka, N. Vietnam, Thailand (Samoeng, Doi Pui, Chon Buri).

C44. *Glycyphana malayensis* (Guérin, 1840)*Glycyphana malayensis ornata* Antoine, 1991

ด้วงดอกไม้จุดมลายู

Deep green or brown with white spotted markings similar to the next four species, but those spots are larger. Pronotum with one pair of white spot in the middle or none.

Length 14-20 mm.

Distribution: N. Thailand (San Pa Tong, Wiang Pa Pao).

C45. *Glycyphana nepalensis* Kraatz, 1894

ด้วงดอกไม้จุดเนปาล

Brown or green, pronotum bears two pairs of white spots in the middle of pronotum, differs from *G. quadricolor* in having one pair or none so in the latter.

Length 10-12 mm.

Distribution: Bhutan, Assam, Myanmar, N. Vietnam, N. Thailand (Samoeng).

(1.7 X)



♂

C41. *Glycyphana fadilae*



♂

C42. *Glycyphana festiva*



♂



♀



♀



♀ △

C43. *Glycyphana horsfieldi*



♂

(after Sakai & Nakai)

C44. *Glycyphana malayensis ornate*



♂



♂ △

C45. *Glycyphana nepalensis*

C46. *Glycyphana nicobarica* Janson, 1877

ด้วงดอกไม้จุดดาวน้อย

Deep green; head, legs, lower surface are shining brown, except the sides of sternum, white. Clypeus is bilobed in front, densely punctured; pronotum and elytra moderately punctured, with scattered white spots and markings. Head bears a minute spot at base, a stripe at shoulder, pronotum with a pair of spot in the middle of each side, occasional with an additional pair of minute spots in the front. Elytra bear four spots lying longitudinally in the middle and other four lateral spots on each elytron.

Length 11-12 mm.

Distribution: Laos, Thailand (Doi Pha Hom Pok, Wiang Pa Pao, Nakhon Pathom).

C47. *Glycyphana quadricolor* (Wiedemann, 1823)

ด้วงดอกไม้สี่สีจุดขาว

It is small, several colors, usually with velvety red upon the pronotum and white or creamy spots on elytra. Clypeus is bilobed on front, densely punctured. Elytra bear two transverse rows minute white spots at behind the middle in *sinuate*, the spots usually not in straight lines in *quadricolor*, with two pairs of creamy spots at behind the middle, the outer lateral spots the largest in *sweinsoni*.

Length 11-12 mm.

C47a. *Glycyphana quadricolor quadricolor* (Wiedemann, 1823)

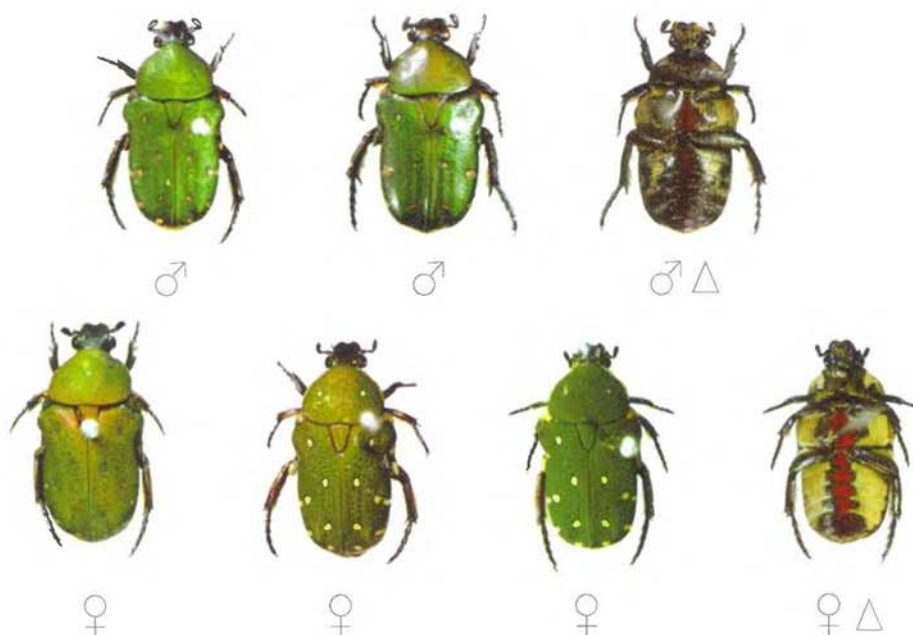
Distribution: Java and N. Thailand (Wang Chin, Wiang Pa Pao).

C47b. *Glycyphana quadricolor sinuata* (Wallace, 1867)

Distribution: Malaysia, Thailand.

C47c. *Glycyphana quadricolor sweinsoni* (Gory & Percheron, 1833)

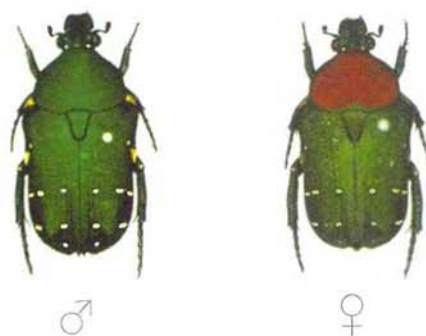
Distribution: N. Thailand (Mae Hong Son, Doi Inthanon, Kanchanaburi).



C46. *Glycyphana nicobarica*



C47a. *Glycyphana quadricolor quadricolor*



(after Sakai & Nakai)

C47b. *Glycyphana quadricolor sinuate*



C47c. *Glycyphana quadricolor sweinsoni*

Gymnophana Gestro, 1891

C48. ***Gymnophana oatesi*** (Gestro, 1891)

ด้วงดอกไม้กลุ่มดาว

Dull black, with white markings above, pronotum with a longitudinal stripe and one to three spots at each side, a spot upon mesepimeron, elytra with a large lateral spot at behind the middle, but containing a black spot inside at the middle of the outer margin, a small spot at apex and some scattered spots at basal half; clypeus nearly straight in front, granulated above.

Length 15 mm.

Distribution: Confined to N. Thailand (Doi Pui, Wiang Pa Pao).

Oxythyrea Mulsant, 1842

Abdomen not completely covered by the elytra; body form rather elongate, smooth and shining above; clypeus bilobed, but not forming two sharp angles in front; prothorax narrower than elytra, with the base scarcely or not at all emarginated before scutellum; scutellum small and extremely acute, with concave sides; elytra strongly sinuated at the outer margins; legs rather long, with the front tibiae sharply toothed, each with two pointed teeth.

C49. ***Oxythyrea*** sp.

ด้วงดอกไม้ไหมขุ่นลาว

Head and pronotum shining green, with yellowish markings at sides and a pairs of spots at middle of the latter, elytra black with green, red, and yellowish markings, a beautiful species. The shape is elongate and convex above, thinly clothed beneath with short yellowish hairs. Clypeus is rugosely punctured and feebly broadly emarginate in front. Pronotum is rugosely punctured. Scutellum is green, with a few punctures. Elytra are deeply striated, black, with green at base and along the suture, with a red longitudinal patch at middle of each elytron and with medium yellowish spots: two near the base, two at apex, two at lateral margin, three medium and one small near the suture, three at the inner edge of the red patch of each elytron. Pygidium is yellowish, finely rugose, clothed densely with yellowish hairs.

Length 17 mm.

Distribution: This genus generally occurs in Europe, W. Asia and Africa. According to Arrow, 1910, so far only ***Oxythyrea cinctella*** has been recorded in this Indo-china region, which is black with white markings. Specimen examined, one female captured from Wiang Pa Pao, 14.VII.2007, leg. Suthat Pengpad; one female, Fang, 1.V.1992, in coll. of the author.

Protaetia Burmeister, 1842

Body form compact, with the legs generally robust; clypeus simple more or less reflexed at the front margin and not emarginated; sternal process short and flattened, widened in front of middle coxae and straight or broadly rounded in front. **Male**, front tibiae simple, the spurs of hind tibiae are always sharper and shorter. **Female**, the front tibiae armed with two or three short teeth.

(1.5 X)



♂

C48. *Gymnophanna oatesi*

(1.7 X)



♀

(Wiang Pa Pao)



♀ △



♀

(Fang)

C49. *Oxthyrea* sp.

(1.6 X)



♂



♂



♂



♂



♂ △



♀

C50. *Protaetia acuminata*

C50. ***Protaetia acuminata*** (Fabricius, 1775)

ด้วงดอกไม้มันบ้าน

Shining black, with white markings; clypeus quadrate in front, granulated above; pronotum closely and strongly punctured, except a small area at the base, the median line and a pair of short lines at its both sides; scutellum very smooth and shining; elytra with a rectangular depressed area near the suture and at posterior half of each elytron, strongly punctured near humeral angles, with irregular white spots aggregated in the middle half of elytra, behind the depressions and near apices. The sutural margins are strongly raised and the apical angles sharply produced. **Male**, the spur of hind tibiae are short and sharp, apical angles of elytra are stronger produced than in the female. **Female**, the spur of hind tibiae are long and blunt.

Length 12-18 mm.**Distribution:** Indonesia, Malaysia, Thailand (Bangkok).C51. ***Protaetia carina*** (Gestro, 1891)

ด้วงดอกไม้ลายรากฝอย

Dull brown, generally none shining above, except the front margin of clypeus, tibia, tarsi and basal part of scutellum coppery-red and shining, with creamy yellow fibrous-root-like markings above the clypeus, pronotum, elytra and pygidium; the lower surface coppery-red, very smooth, shining and fringed with long creamy-yellow hairs. Body is rather broad and short; clypeus short, rather quadrate and granulated above. **Male**, abdomen being feebly punctured especially the last segment, the hind tarsi are longer and the spines of hind tibiae shorter and sharper. **Female**, the abdomen is extremely smooth and the segment not thickly punctured.

Length 21-23 mm.**Distribution:** India, S. China, N. Vietnam, N. Thailand (Wiang Pa Pao, Chiang Dao).C52. ***Protaetia caudata*** Arrow, 1910

ด้วงดอกไม้สะเก็ดดาว

Deep green, with metallic diffusion above, bearing small five or six white spots on each side of pronotum, a pair of white spot on scutellum, some white spots on elytra and a white spot on each side of pygidium; clypeus rather rounded in front, strongly punctured; elytra with a longitudinal ridge in the middle of each elytron; pygidium clothed with short yellowish hairs.

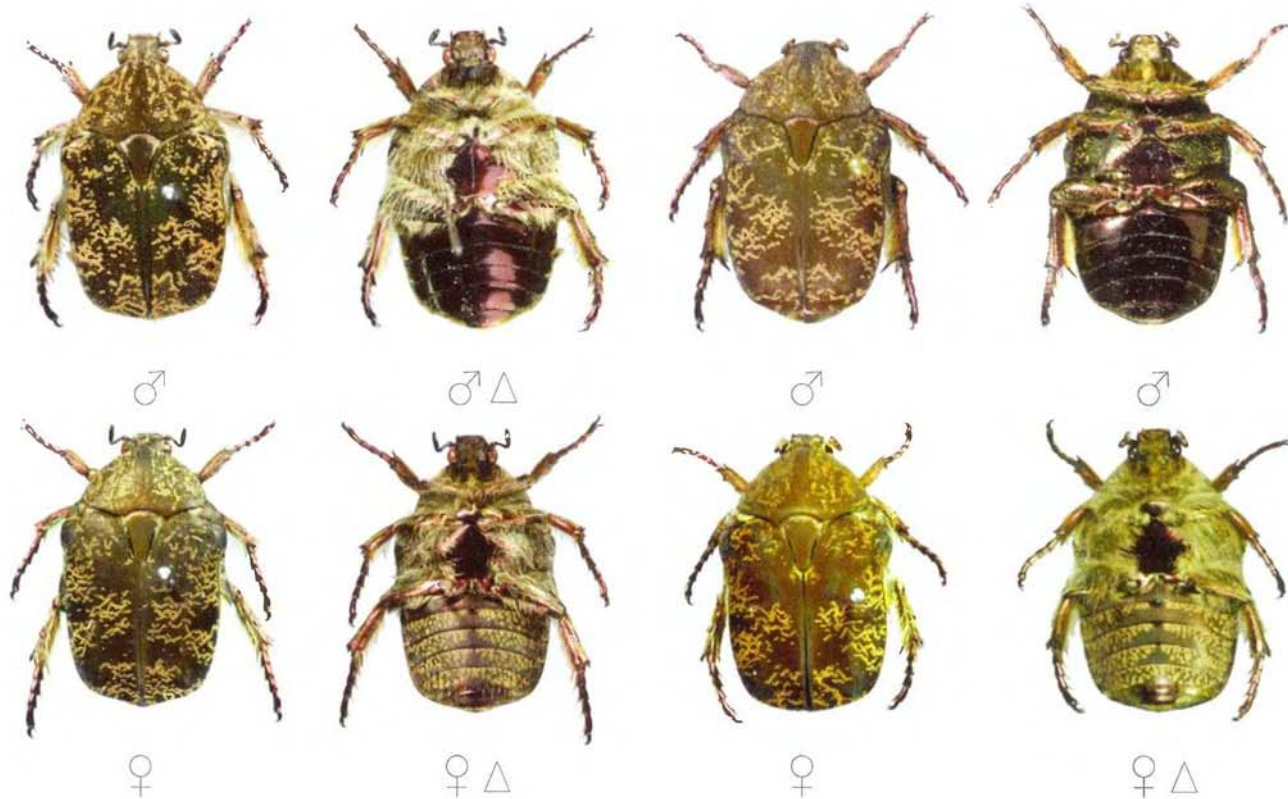
Length 18 mm.**Distribution:** India, N. Thailand (Wiang Pa Pao).C53. ***Protaetia chaminadei*** Antoine, 1991

ด้วงดอกไม้ลายหลังขน

Dull brown, with yellow or orange-brown markings and densely clothed with fine short yellow hairs above; the lower surface fringed with long yellow hairs; clypeus quadrate, rounded at front, granulated above; pronotum and elytra densely clothed with fine yellow short hairs, with also irregular creamy markings.

Length 16-19 mm.**Distribution:** Confined to N. Thailand (Wiang Pa Pao).

(1.5 X)



C51. *Protactia carina*



C52. *Protactia caudata*



C53. *Protactia chaminadei*

C54. *Protaetia fulgidipes* Bourgoïn, 1919

ด้วงดอกไม้เขียวฟ้าขาแดง

Rather large, green, but not very shining, which differs from *P. montana* group in diffusing with blue at upper side and lower side, with tibiae and femora red, but being metallic green at a certain side light ray. Clypeus is rectangular, slightly longer than wide, rugosely and strongly punctured, ridged at margins in front and lateral sides, with the median area elevated longitudinally. Sternum and abdomen very smooth, metallic green suffused with blue. Legs at lower surface are more green, or reddish green.

Length 28-32 mm, I obtained one large male of 32 mm from Mae Taeng, 1.V.2007.

Distribution: Laos, N. Thailand (Mae Taeng).

C55. *Protaetia fusca* (Herbst, 1790)

ด้วงดอกไม้ซีอก

Pronotum, scutellum and pygidium chocolate colored, not shining except above the head, legs and lower surface; with irregular five creamy-yellow spots, mostly closely aggregated at the sides of pronotum and in two masses at sides of elytra before and behind the middle. Pronotum is finely punctured at sides. Elytra are finely punctured at sides and apices. Male, the abdomen is well arched and hind tibiae have a longer and thicker fringe than in the female.

Length 13-16 mm.

Distribution: India, Myanmar, S. China, Japan, Malaysia, Thailand (Fang, Chiang Dao, Doi Pui, Bangkok).

C56. *Protaetia chicheryi* Antonio, 1992

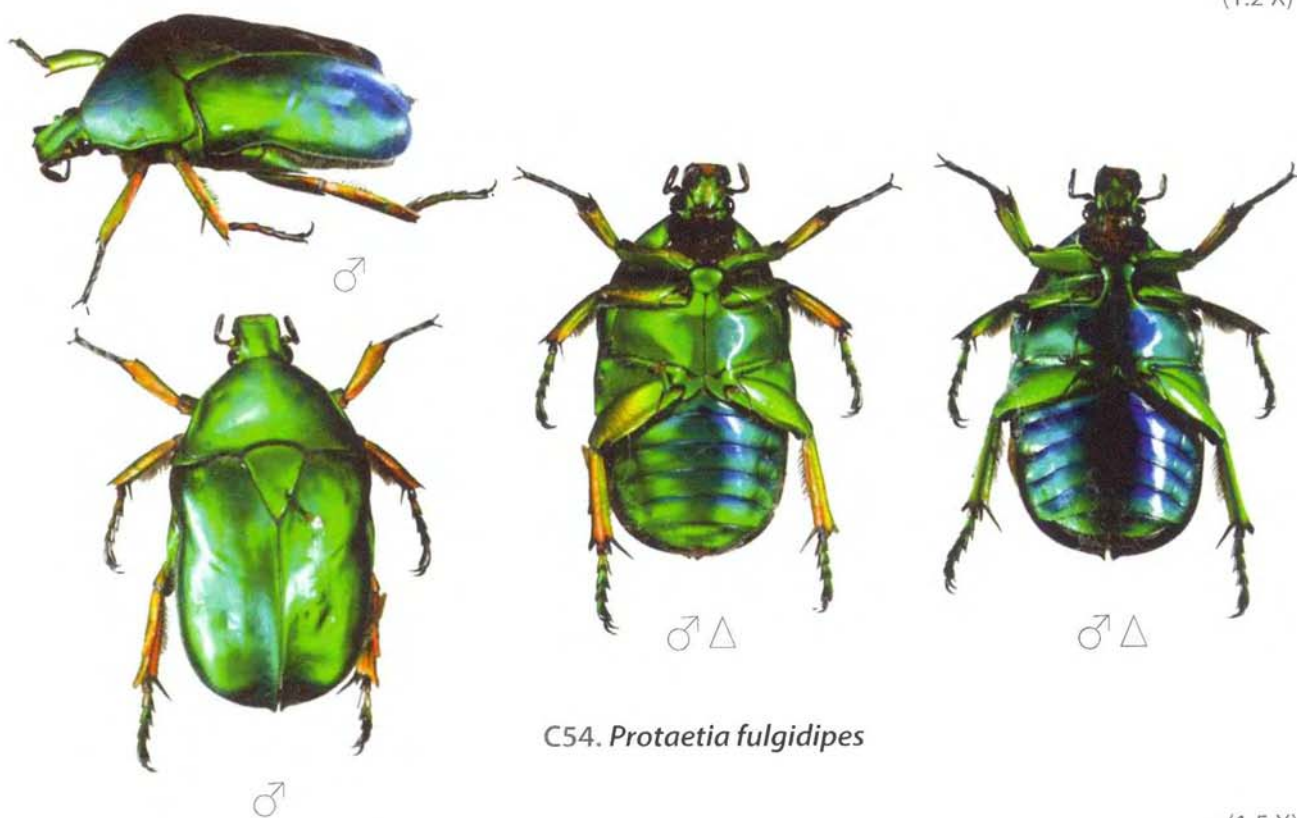
ด้วงดอกไม้ขาแดงขน

Bright metallic green, very smooth and shining, legs metallic coppery-red. Elytra are unpunctured, with apical angles sharp and produced while those of *P. montana* very slightly produced in male. The inner side of mid and hind femora are densely fringed with yellowish hairs. Meta-sternum and mid-sternites suffused with dark red.

Length 24 mm.

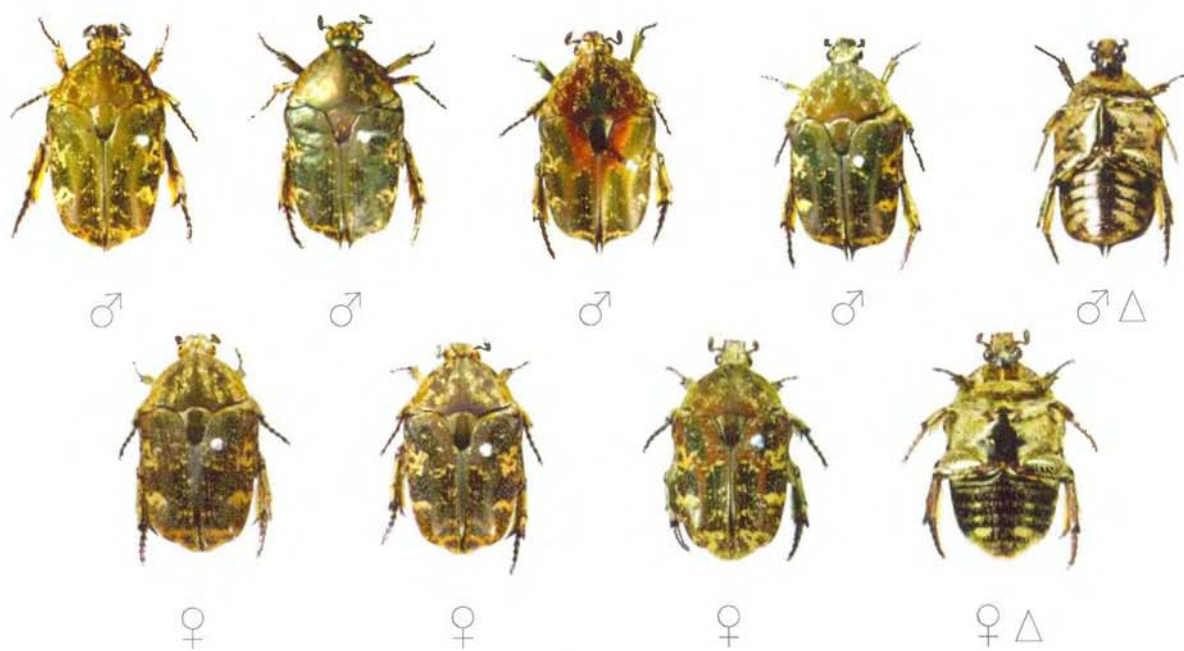
Distribution: N. Thailand (Fang).

(1.2 X)



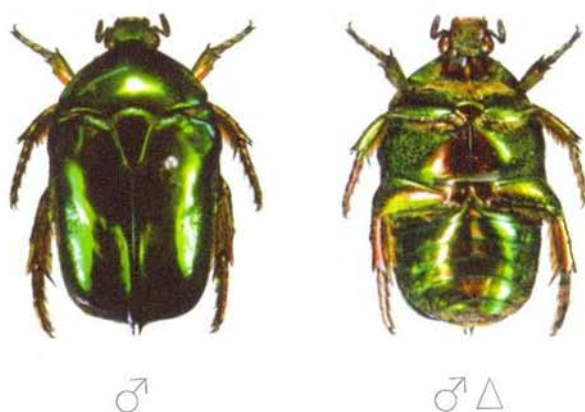
C54. *Protactia fulgidipes*

(1.5 X)



C55. *Protactia fusca*

(1.3 X)



C56. *Protactia chicheryi*

C57. *Protaetia himalayana* Mikšić, 1967

ด้วงดอกไม้ขาแดงหิมาลัย

Elytra are unpunctured, with apical angles sharp and produced. mid-metasternum and mid-sternites suffused broadly with deep coppery red differs from *P. chicheryi* and *P. Montana*.

Length 20-24 mm.

Distribution: N. Thailand (Wiang Pa Pao).

C58. *Protaetia montana* (Nonfried, 1891)

ด้วงดอกไม้ขาแดงภูเขา

Bright metallic green, very smooth and shining, legs metallic coppery-red; clypeus rather quadrate, with a longitudinal ridge in the middle, strongly punctured and suffused with reddish above. Pronotum is strongly punctured at sides. Elytra are unpunctured, with apical angles sharp but none produced. Meta-sternum is smooth in the middle, but less diffused with red than other two preceding species. **Male**, elytra slightly produced at apical angles, the teeth of the front tibiae are very weak.

Length 24-28 mm.

Distribution: India, N. Vietnam, Thailand (Doi Pui, Doi Pha Hom Pok, Nan).

C59. *Protaetia niveoguttata* Janson, 1876

ด้วงดอกไม้จุดดาวใหญ่

Deep green, with metallic diffusion above, with some white spots on clypeus, pronotum and scutellum; clypeus short, rather quadrate, strongly punctured, slight shining; pronotum and elytra scarcely punctured.

Length 20-24 mm.

Distribution: Vietnam, Laos, Cambodia, Thailand (Bangkok, Chiang Mai).

(1.3 X)



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♂ Δ

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C57. *Protactia himalayana*



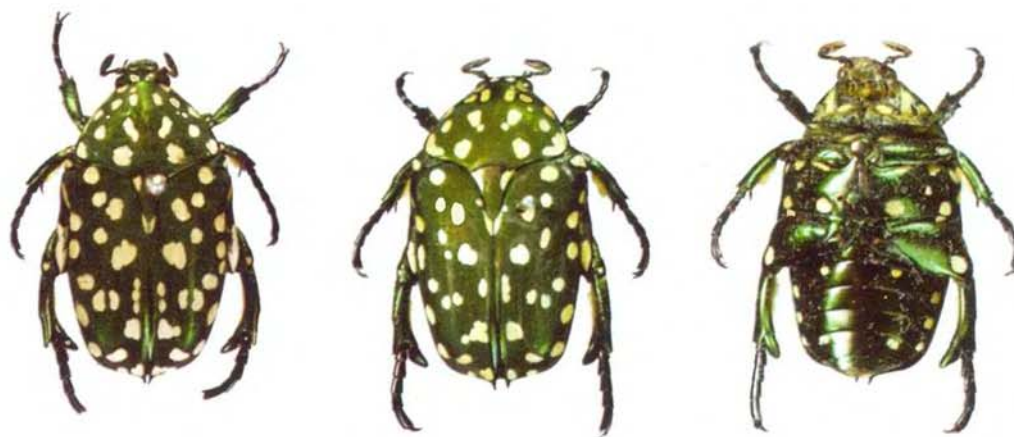
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♂ Δ

C58. *Protactia Montana*



♂

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♂ Δ

C59. *Protactia niveoguttata*



C60. *Protaetia rubrocuprea* Bourgoïn, 1917

ด้วงดอกไม้ปลายนาง

Dull coppery-red, strongly punctured, not shining above, but smooth and shining beneath; clypeus quadrate, strongly punctured, pronotum moderately convex; elytra broadly and deeply grooved longitudinally at middle to apex of each elytron.

Length 20 mm.

Distribution: N. Vietnam, N. Thailand (Wiang Pa Pao).

C61. *Protaetia ventralis* (Fairmaire, 1893)

ด้วงดอกไม้ลายจั่ว

Dull brown, with orange-yellow markings above, the lower surface fringed with yellow hairs; clypeus square, rather straight at the front margin, granulated above; pronotum and elytra with irregular orange-yellow markings rather bare, without fine short hairs.

Length 18-19 mm.

Distribution: N. Vietnam, N. Thailand (Chiang Dao, Wiang Pa Pao).

Tribe Gymnetini

Pronotum with basomedian lobe enlarged, covering scutellum; mesepimeron distinct; posthumeral emargination of elytra distinct, surface usually velutinous, mesometasternal protrusion developed.

Clinteria Burmeister, 1842

Body form compact, rather short; clypeus quadrate, slightly bilobed; eyes moderately prominent. Male, front tibiae are generally a very little more slender than in the female.

C62. *Clinteria atra egens* Vollenhoven, 1864

ด้วงดอกไม้สองสหาย

Dull black, with two irregular yellow spots on elytra, the lower surface strongly punctured and shining; clypeus bilobed in front, strongly punctured, slightly shining; pronotum rather convex; elytra with a large irregular yellow spot on each side of elytron.

Length 16 mm.

Distribution: W. Malaysia, Thailand (Phu Kae – Saraburi).

C63. *Clinteria ducalis* White, 1856

ด้วงดอกไม้สี่สหาย

Dull black, with four irregular yellow spots on elytra, lower surface strongly punctured and shining; clypeus bilobed in front, strongly punctured and slight shining; pronotum rather convex; elytra with two irregular yellow spots, a small one at apex and the other larger one at middle side of each elytron.

Length 15-16 mm.

Distribution: China, N. Vietnam, Thailand (Doi Pui, Wiang Pa Pao, Pak Chong, Surat Thani).

(1.3 X)



♂

♂ Δ

♂

♂ Δ

C60. *Protactia rubrocuprea*



♂

♂ Δ

♂

♂ Δ

C61. *Protactia ventralis*

C62. *Clinteria atra egens*



♂

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♀ Δ

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♀ Δ

C63. *Clinteria ducalis*

Tribe Diplognathini***Anthracophora*** Burmeister, 1842

Body form compactly oval, a little depress, with rather short legs; head short, clypeus above twice as broad as it is long, with the front margin reflexed and not distinctly excised; prosternal forming two nodular processes in front of the anterior coxae. The sexes are alike externally.

C64. ***Anthracophora siamensis*** Kraatz, 1894

ด้วงดอกไม้เงินสยาม

Dirty black, with golden silvery bands on elytra; clypeus short, bilobed in front, rather rounded at the front angles, granulated above, with a pair of pale white spots at base; pronotum with two pair of pale white spots at front; elytra with irregular gray markings above and a broad longitudinal golden-silvery band at posterior half of each elytron.

Length 15-18 mm.**Distribution:** Confined to N. Thailand (Mae Taeng, Chiang Dao).**Tribe Phaedinini**C65. ***Theodosia perakensis ayuthia*** Nagai, 1998

ด้วงดอกไม้เคลือบทอง

Entirely bright golden green, suffused with greenish, very variable in colored depending on the degrees of light-ray; the lower surface clothed with fine white hairs. **Male**, clypeus bearing a sharply-pointed horn, curving upwards and obliquely backwards, and a pair of short sharp teeth at the front angles; pronotum hexagonal-shaped, with a strongly pointed horn at middle, projecting forwardly, granulated above; elytra sparsely punctured, smooth and shining; front legs greatly elongated, tibia long and densely fringed with yellow hairs beneath. **Female** is unknown.

Length 20-23 mm.**Distribution:** Confined to S. Thailand (Khao Pota – Nakhon Si Thammarat).***Mycteristes*** Mycteristes, 1840

Body form is slender, with rather long legs and front tibiae sharply three-toothed in both sexes; prothorax much narrower at the shoulders than the elytra, wider in the middle than at the base.

Male, head excavated above and the clypeal margin produced into two lateral, or a single median horn, the front tibiae and all tarsi are longer than in the female. **Female**, head flat and the clypeus bidentate, legs are of normal length.

C66. ***Mycteristes minettii*** Antoine, 1991

ด้วงดอกไม้หลังนูน

Greenish-brown, not shining above, but very smooth and shining beneath, clothed with fairly fine-white hairs above. **Male**, clypeus with a broad metallic process in the middle front, dilated and notched in front, a short sharply pointed tooth pointing forwards at both sides; pronotum with a small white spot at the middle of each side and a narrow median line forming of fine-white hairs; elytra with a pair of irregular ridges from the bases to apices, abruptly dilated in the middle, and with a short ridge near the humeral angles. **Female**, clypeus is strongly bidentated in front. I treat the species name after Sakai & Nakai, 1998. However, there is another close related species ***M. gestroi*** Arrow, 1910 which is might be the same as this species. Further studies with more specimens are needed.

Length 16-17 mm.**Distribution:** Confined to N. Thailand (Fang, Mae Taeng, Chiang Dao, Wiang Pa Pao).

(1.5 X)



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♀



♀ △

C64. *Anthracophora siamensis*

(1.3 X)



♂



♂



♀

C65. *Theodosia perakensis ayuthia*

(1.5 X)



♂

(Mae Taeng)



♂

(Waing Pa Pao)



♂

(Waing Pa Pao)



♂ △



♂

(Fang)



♀

(Chiang Dao)



♀

(Waing Pa Pao)



♀ △

C66. *Mycteristes minettii*

C67. *Mycteristes tibetanus* Janson, 1917

ด้วงดอกไม้เบต

Entirely coppery-red, suffused with greenish. **Male**, head with a pair of vertical-flattened horns, projecting forwards and upwards; clypeus short rather rounded in front, smooth and shining; pronotum hexagonal-shaped, granulated and shining above; elytra fairly finely punctured, smooth and shining, fringed with short brownish hairs, with a broad excavation near the scutellum; front legs greatly elongated, front tibia with a minute tooth at the outer margin. **Female**, dark coppery-brown, non-shining, clothed with fine brownish hairs above; head without horns, clypeus angulated at front angles, the front margin concave in the middle; front legs short, front tibia with three sharp teeth at the outer margin.

Length 19-21 mm.

Distribution: Confined to N. Thailand (Wiang Pa Pao).

Tribe Taenioderini

Clerota Burmeister, 1842

C68. *Clerota rigifica* Janson, 1917

ด้วงดอกไม้ดำขีดเหลือง

Shining black, with or without a broad longitudinal band from the front of clypeus to the base of pronotum and scutellum, a lateral band at both sides of pronotum which found in specimens from Cameron Highland, Malaysia, but usually without so in Thai specimens from Wiang Pa Pao. Elytra bear a slightly curved longitudinal band, usually broken into spots, from elytral base to near apex, meso-thoracic epimeron, meta-thoracic epimeron and sides of meta-sternum bright yellow.

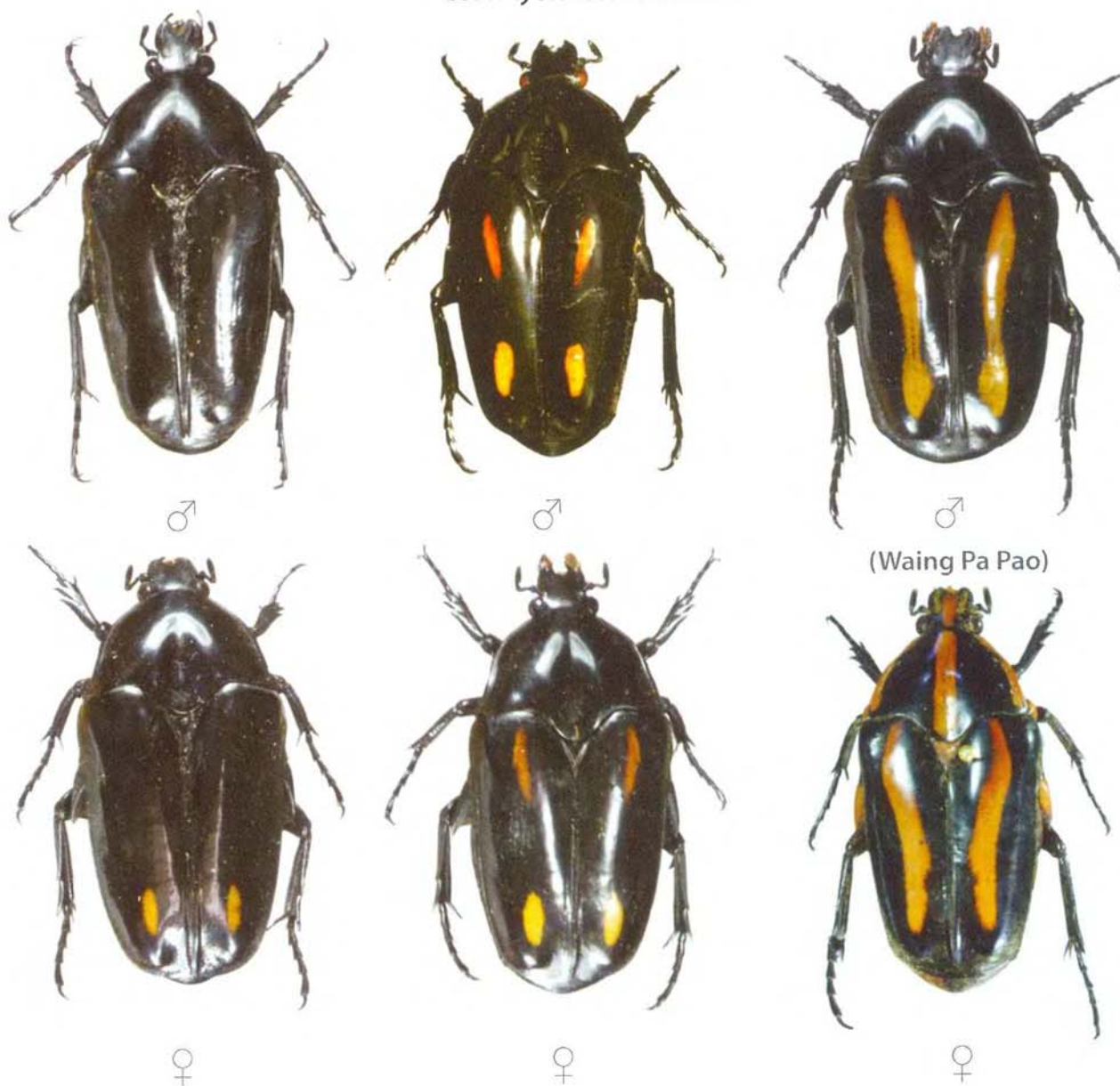
Length 35-42 mm.

Distribution: Malaysia, Kalimantan, Thailand (Khao Yai, Wiang Pa Pao).

(1.3 X)



C67. *Mycteristes tibetanus*



C68. *Clerota rigifica*

Coilodera Hope, 1831

- C69.
- Coilodera penicillata***
- Hope, 1831

ด้วงดอกไม้ส้มดำใหญ่

Smooth shining black, with golden-orange above, clypeus bilobed in front, with a black longitudinal ridge at median; pronotum with two oblique ridges at middle of each side and strongly marginated, the median part orange and deeply depressed within the ridges; scutellum orange; elytra broadest at base and strongly excised behind the shoulders, with three large and two small spots of pubescence orange on each elytron; pygidium densely orange pubescent.

Length 20-23 mm.**Distribution:** India, Myanmar, N. Thailand (Doi Pha Hom Pok, Wiang Pa Pao).

- C70.
- Euselates ornata laotica***
- Mikšić, 1974

ด้วงดอกไม้สามสายลาว

Black and orange-red, marked with yellow as follows: clypeus with longitudinal stripes at sides; pronotum with three longitudinal stripes at median and sides, entire scutellum, elytron with two lateral spots at front half and behind half, an irregular spot at mid suture and a spot near apex; elytra with an additional pair of red-longitudinal bands.

Length 12-13 mm.**Distribution:** Laos, N. Thailand (Mae Taeng, Wiang Pa Pao).

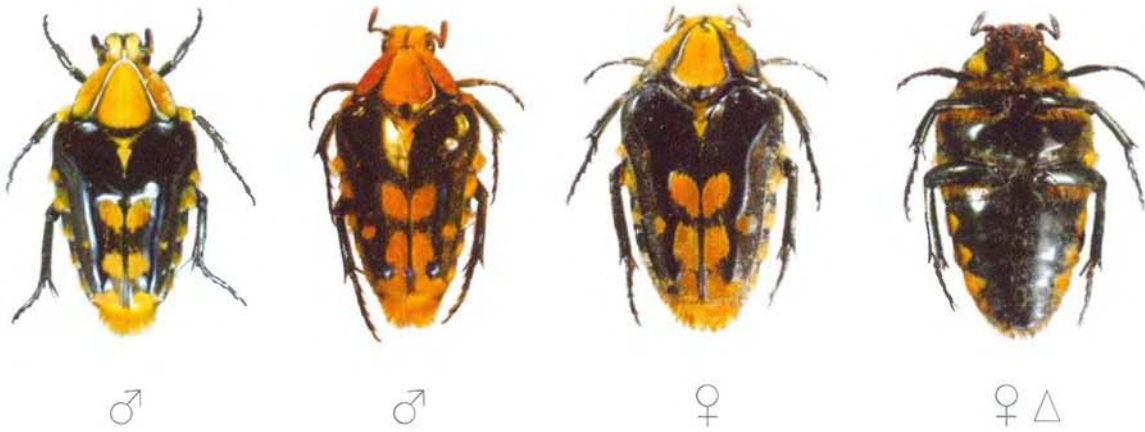
- C71.
- Euselates perraudierei***
- (Fairmaire, 1893)

ด้วงดอกไม้สีสายแดง

Black body with yellow markings; the colored forms resemble ***Euselates virgata***, but darker; clypeus brown and shining, almost black; scutellum black, with yellowish borders; elytra reddish-brown and with two additional lateral white spots at the middle of the front half and just behind the middle of each elytron.

Length 19-20 mm.**Distribution:** Laos, N. Thailand (Wiang Pa Pao).

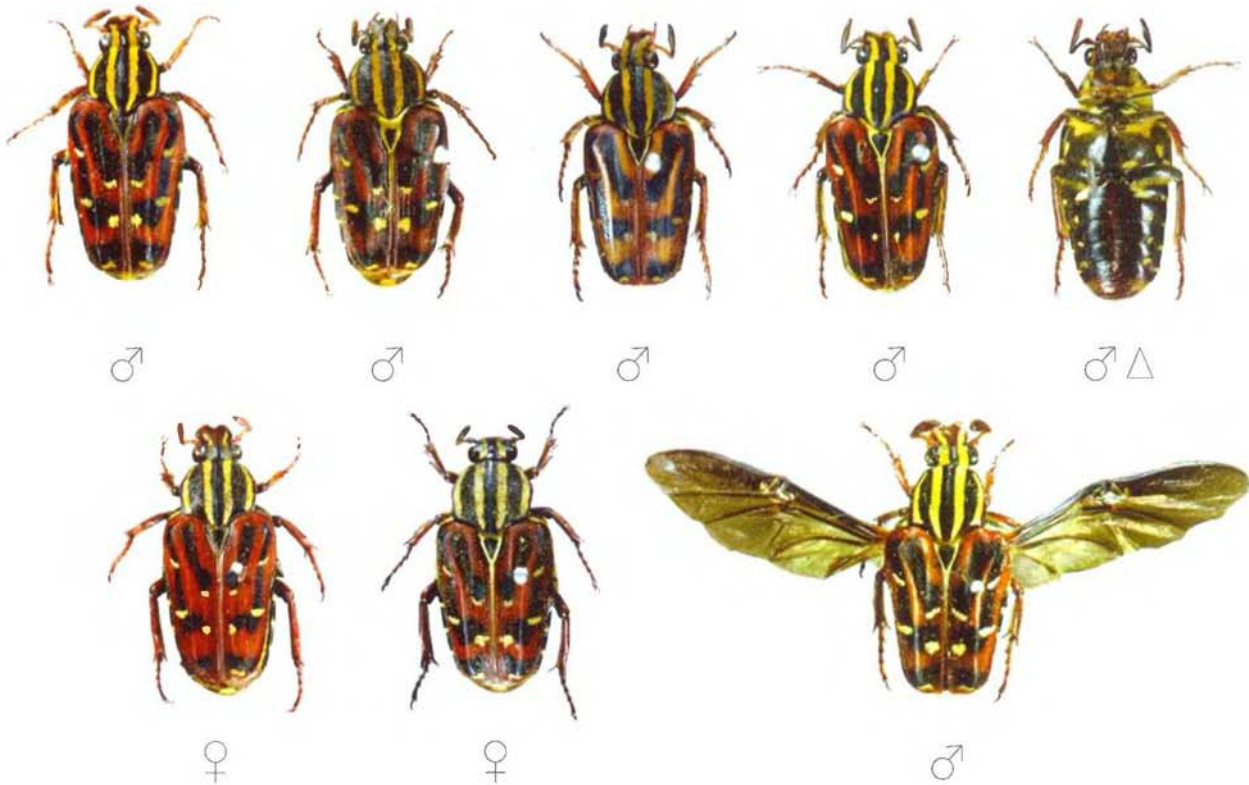
(1.5 X)



C69. *Coilodera penicillata*



C70. *Euselates ornate laotica*



C71. *Euselates perraudierei*

C72. *Euselates schoenfeldti* Kraatz, 1893

ด้วงดอกไม้สีสายดั่ง

Black and red, with yellow markings, non-shining above; the lower surface strongly punctured and shining; clypeus strongly bidentated in front, granulated above, with a longitudinal stripes at sides; pronotum marked with four longitudinal stripes; elytron with two red-longitudinal stripes at lateral margin and at the middle, and also five yellow spots on each side.

Length 20-21 mm.

Distribution: China, N. Vietnam, Laos, N. Thailand (Mae Taeng).

C73. *Euselates virgata* (Janson, 1892)

ด้วงดอกไม้หน้าคน

Black and brownish-orange, with yellow markings: a man-face like above, clypeus with a pair of longitudinal stripes at sides continuing to the base of pronotum; pronotum with an additional pair of stripes at near lateral margins; scutellum yellow; elytra with two red longitudinal stripes at lateral margin and the middle, and five yellow spots on each elytron.

Length 20-21 mm.

Distribution: S. China, Laos, N. Vietnam, N. Thailand (Mae Taeng).

Ixorida Thomson, 1880

Body form is elongate, clypeus long and slightly bilobed in front; prothorax narrower than the elytra at the shoulders, scutellum rather long; pygidium generally prominent.

C74. *Ixorida magnierei* (Bourgoin, 1917)

ด้วงดอกไม้ลายสามแฉก

Black with orange markings as follows: clypeus, a longitudinal stripe at each side, pronotum nearly the whole leaving a triangular area at the base of each side, scutellum, elytra a median stripe below the scutellum, two large spots over the suture in mid and behind; clypeus quadrate and bilobed in front, with a narrow median ridge, pronotum finely granulated, with a broad and strong depressed groove extending from pronotum, over scutellum, suture to apices of elytra.

Length 16-18 mm.

Distribution: Laos, N. Thailand (Wiang Pa Pao, Fang, Chiang Dao).

C75. *Ixorida mouhotii* (Wallace, 1867)

ด้วงดอกไม้ลายแก้ว

Black with yellow, or orange yellow markings as follows: clypeus with a longitudinal stripe at each side, pronotum with a broad median line, the whole scutellum, elytra with a vine-glass shaped markings in the middle, a spot at the shoulder, two lateral spots one at the front half and the other one at behind half of each elytron, a spot at pygidium; clypeus slightly dilated and bilobed at front, granulated; elytra closely and moderately punctured, slight shining on the non-marking parts.

Length 16-18 mm.

Distribution: Vietnam, Laos, Myanmar, Thailand (Wiang Pa Pao, Chiang Dao, Phu Khieo).

(1.3 X)



♂



♂

C72. *Euselates schoenfeldti*

♂



♂ Δ



♀

C73. *Euselates virgata*

♂



♂ Δ



♂



♂

C74. *Ixorida magnierei*

♂



♂



♀



♀

C75. *Ixorida mouhotii*

Meroloba Thomson, 1880

C76. ***Meriloba suturalis*** (Vollenhoven, 1858)

ด้วงดอกไม้เส้นคูกกลาง

Black marked with creamy-yellow above as follows: clypeus and pronotum with a broad longitudinal stripe at each side, a Y-shaped band in the middle of the latter, scutellum nearly the whole except the base, elytra with two narrow lines along the suture and two other weaker lines at sides; clypeus slightly dilated and bilobed in front, granulated; pronotum rugosely punctured. Male, front tibia is longer and slender than the female. Female, front tibia bears three sharp teeth.

Length 13-17 mm.

Distribution: Malaysia, Indonesia, Kalimantan, Thailand (Doi Pui, Wiang Pa Pao, Mae Taeng).

Taeniodera Burmeister, 1842

Body form is elongate, with the sides and end of abdomen distinctly visible from above; prothorax narrower than the elytra at the shoulders. The sexes frequently differ from each other to a very remarkable degree, but there is no single external characteristic by which they may be distinguished.

C77. ***Taeniodera borneensis puncticollis*** Kraatz, 1892

ด้วงดอกไม้โล่ได้

Black, rather broad, elytra marked with red and white, shield-like pattern; clypeus strongly bilobed in front and strongly punctured above; pronotum strongly punctured, scutellum black with white bordered; elytra broadest at bases and strongly excised behind the shoulders, bearing two broad transverse-red bands at bases and at middle, a white spot at each shoulder and an irregular white spot at the middle of the suture; abdomen with four white stripes on each sides.

Length 21 mm.

Distribution: N. Sumatra, Malaysia, S. Thailand (Khlung Nakha – Ranong).

C78. ***Taeniodera flavofasciata flavofasciata*** (Moser, 1901)

ด้วงดอกไม้ดำเอวเหลือง

Velvety black, with a transverse band cross the elytra, the meso-sternal epimera, the sides of sternum, the hind coxae, a large patch on each side of the abdomen beneath and a spot on each side of the 2nd segment above lemon-yellow. The clypeus is deeply notched and frontal carina is not strong. Male, the extremity of hind tibia is broader and directed more outwards. Female has a small additional yellow spot at the apical margin of each elytron.

Length 18-21 mm.

Distribution: Assam, N. Thailand (Wiang Pa Pao).

C79. ***Taeniodera idolica*** Janson, 1909

ด้วงดอกไม้ลายตะเข็บ

Dull black, with creamy-yellow markings as follows: clypeus with a longitudinal stripe at each side; pronotum with a short lateral stripe and a Y-shaped marking in the middle, the whole scutellum, elytra with lateral spots at front half and middle half of each elytron, an irregular stripe along the scutellum and suture; clypeus rather rounded in the front, slightly wider than long; pronotum with finely granulated; elytra scarcely punctured and non-shining.

Length 9-12 mm.

Distribution: Myanmar, Laos, N. Thailand (Wiang Pa Pao, Doi Pui).

(1.5 X)



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♂



♂ Δ



♀

C76. *Meriloba suturaalis*

♂



♂ Δ

C77. *Taeniodera borneensis puncticollis*

♂



♂ Δ

C78. *Taeniodera flavofasciata flavofasciata*

♀

C79. *Taeniodera idolica*

C80. *Taeniodera malabariensis simillima* (Bourgoin, 1924)

ด้วงดอกไม้ไล้ส้ม

Orange-red and black, with golden-yellow markings, non-shining above; the lower surface high shining; clypeus bilobed in front, granulated above; pronotum black with a pair of golden-yellow stripes along the median and the base; scutellum black; elytra three-fifths from the base orange-red, the rest black, with some short transverse-yellow markings at sutures, at the joint of the two background colors.

Length 15-17 mm.

Distribution: Vietnam, Malaysia, N. Thailand (Wang Chin, Mae Taeng).

C81. *Taeniodera sericea* (Gestro, 1888)

ด้วงดอกไม้เสื่อเขียวส้ม

Coppery-red, with metallic green suffusion above; the lower surface bright coppery-red, very shining; clypeus bilobed in front, with a longitudinal ridge between the eyes; pronotum strongly punctured; scutellum deep green; elytra broadest at base and strongly excised behind the shoulders, orange-brown, with a broad green longitudinal stripe from the mid-base of each elytron along the depression which parallel to the suture and with one or two white spots in the middle; abdomen with four short white stripes on each side.

Length 19-20 mm.

Distribution: Myanmar, Vietnam, N. Thailand (Doi Pha Hom Pok).

C82. *Taeniodera sericoides* (Pulian, 1960)

ด้วงดอกไม้เสื่อเขียว

Coppery-red, with greenish suffusion above; the lower surface bright coppery-red, very shining; clypeus bilobed in front, with a longitudinal ridge between the eyes; pronotum strongly rugosely punctured; scutellum metallic green; elytra broadest at base, strongly excised behind the shoulders, brownish with metallic green suffusion above, apical margins coppery-red, with four well-marked longitudinal grooves behind the scutellum; pygidium clothed with brown hairs; sides of abdomen strongly punctured and with four short white stripes of each side.

Length 15-17 mm.

Distribution: N. Vietnam, N. Thailand (Doi Pha Hom Pok).

(1.9 X)



♀

C80. *Taeniodera malabariensis simillima*

(1.6 X)



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C81. *Taeniodera sericea*

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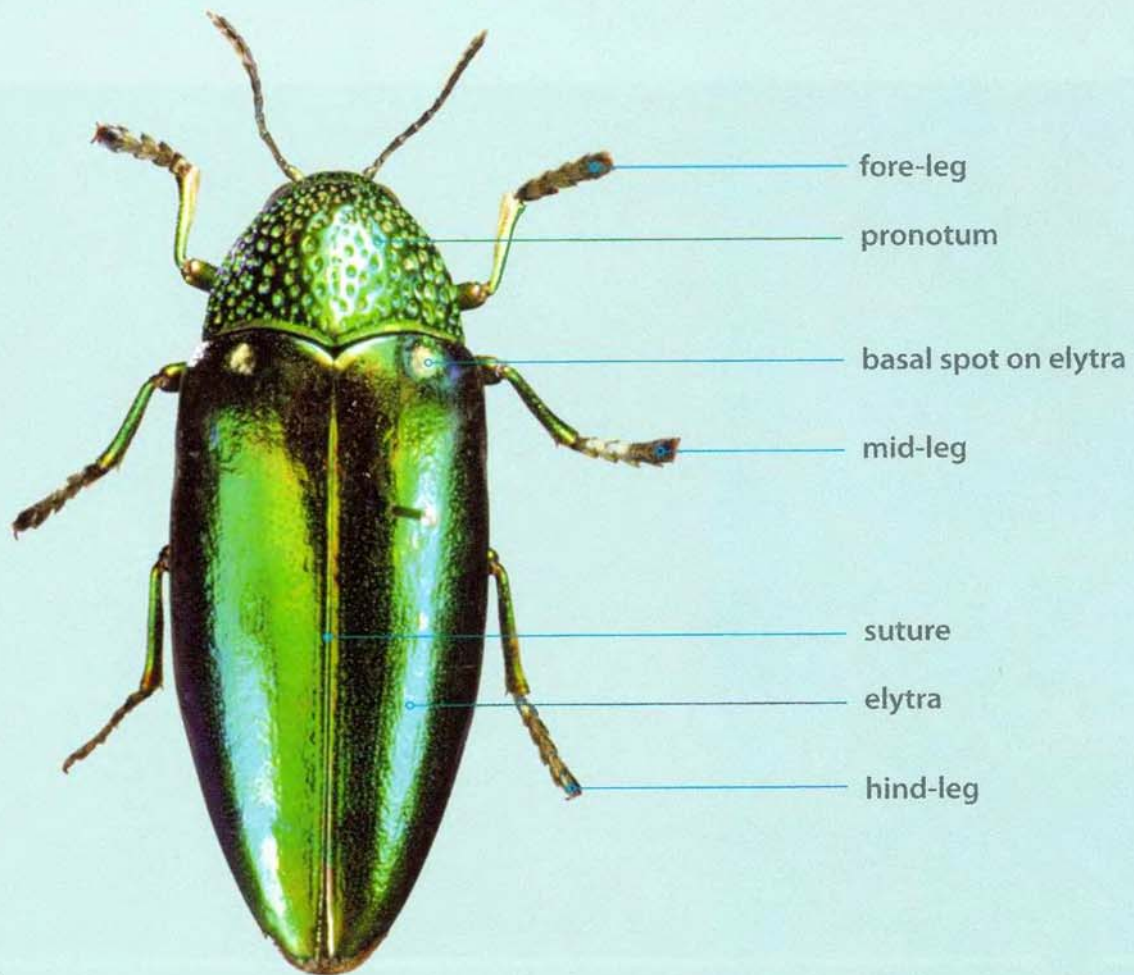
C82. *Taeniodera sericoides*

FAMILY BUPRESTIDAE

The members of the family mostly are metallic golden blue, green, coppery-red, purple, yellow and black. Owing to their brilliant colored the common names such as "jewel beetles" or "flying jewels" are better known than "metallic wood-boring beetles". The beetles are very variable size, the body Length ranging from 1 - 70 mm or longer. The antenna is eleven-jointed and serrate which is one of important parts for identification of the family. The current list of Siamese buprestid beetles includes 6 subfamilies 62 genera 323 species together with distributing regions in Asia and the habitation localities in Thailand is given (Ohmomo, 2008). With the help of Dr. S. Ohmomo, I have illustrated 63 species in this book covering all the 6 subfamilies. Because many of them are so small and we have a limitation of collecting done in many parts of Thailand. Leaving a lot of unavailable of value specimens for inland collections and many of them are still unknown.

After some years of experiences we have seen that some adult beetles, such as *Chrysochroa corbeti*, *C. mnischei*, *C. rajah thailandica* and *C. buqueti rugicollis* feeding on leaves of *Pterospermum acerifolium* (ปอหู่ช้าง) of the Family Sterculiaceae in the northern forests. While the common rounded body species, *Sternocera* spp. feed on leaves, young green-bark or young branches of *Pithecellobium dulce* (มะขามเทศ) or some other kinds of trees, *Acacia auriculaeformis* (กระถินณรงค์) and *Albizia procera* (ทองถ่อน), for examples. The larvae of the latter found feeding on young roots of the young trees especially *Albizia lebbek* (พญานาค). The longest periods of life from egg, larva and pupa are under the ground for 1-2 years. The mature adults which found on the wings usually in July to October.

Life history of *Belionota prasina* which is considered as a pest of mango trees takes about a year. The larvae confine themselves entirely to the soft, outer layers of wood. They only penetrate deeper into the sap-wood just to pupate there. The damages of other species including the large species, *Megaloxantha* spp. are also mainly to the young bark of the tree. The larvae of buprestid normally are elongate white or yellowish-white in color, legless. Head is small, with a broad and rather flat prothoracic segment, following by two narrow thoracic segments, and long and narrow abdominal segments.



1. Dorsal view

2. Ventral view

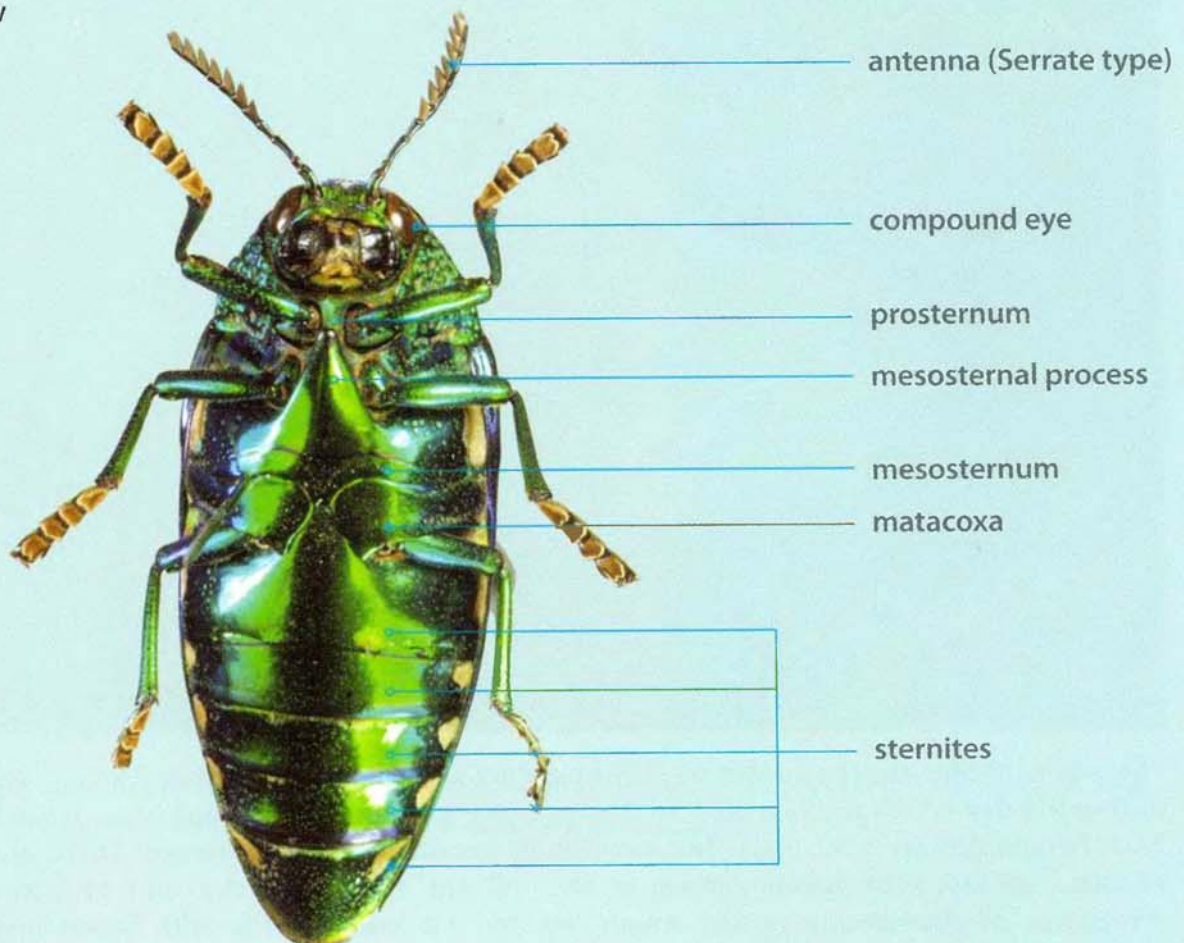
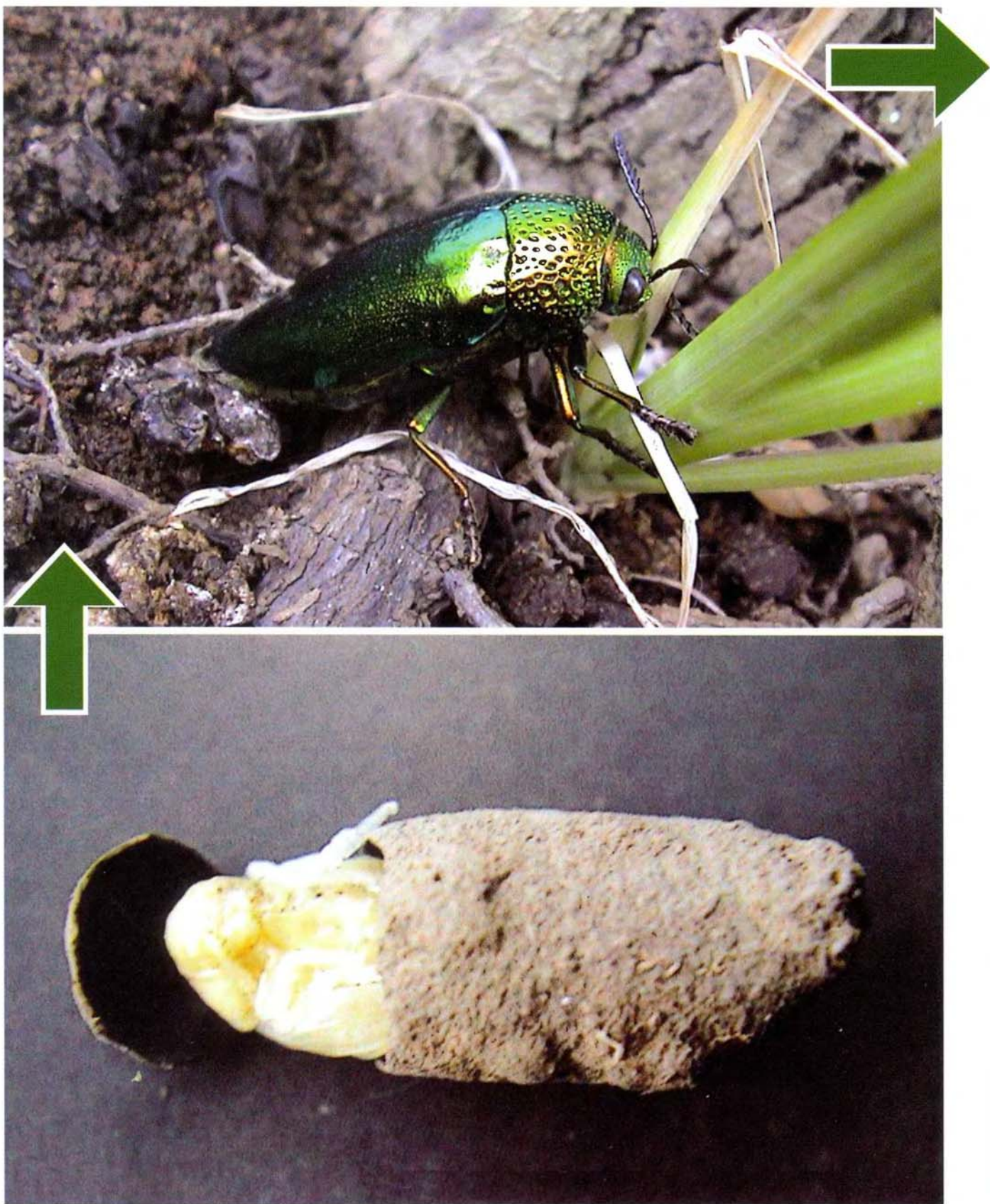


Figure 40. *Sternocera aequisignata punctatofaveata*, showing external characteristics, 1. Dorsal view, 2. Ventral view.



The adults of *Sternocera* spp. are usually on wings during July to October. The copulation occurs during the day which will last for 1 to 2 hours. Eggs are laid singly in soil around the host plants. Each female can lay 5-12 eggs. The incubation period is about 2 months. There are five larval instars. The first four instars remain in the soil and feed upon the root of host plants and rhizomes of *Arundinaria pusilla* which last for 3-4 months. The fifth larval instar of fully developed larva stop eating and builds the earthen cell or cocoon in the soil. The quiescent larval stage requires 14 to 15 months inside the cocoon to transform to pupal stage. The pupal stage lasts 2 to 3 months. The young adult usually remains in the cocoon for a month. The emerged adult has a short life of 1 to 3 weeks. The entire life cycle form egg, larva, pupa and adult lasts about 2 yeras.

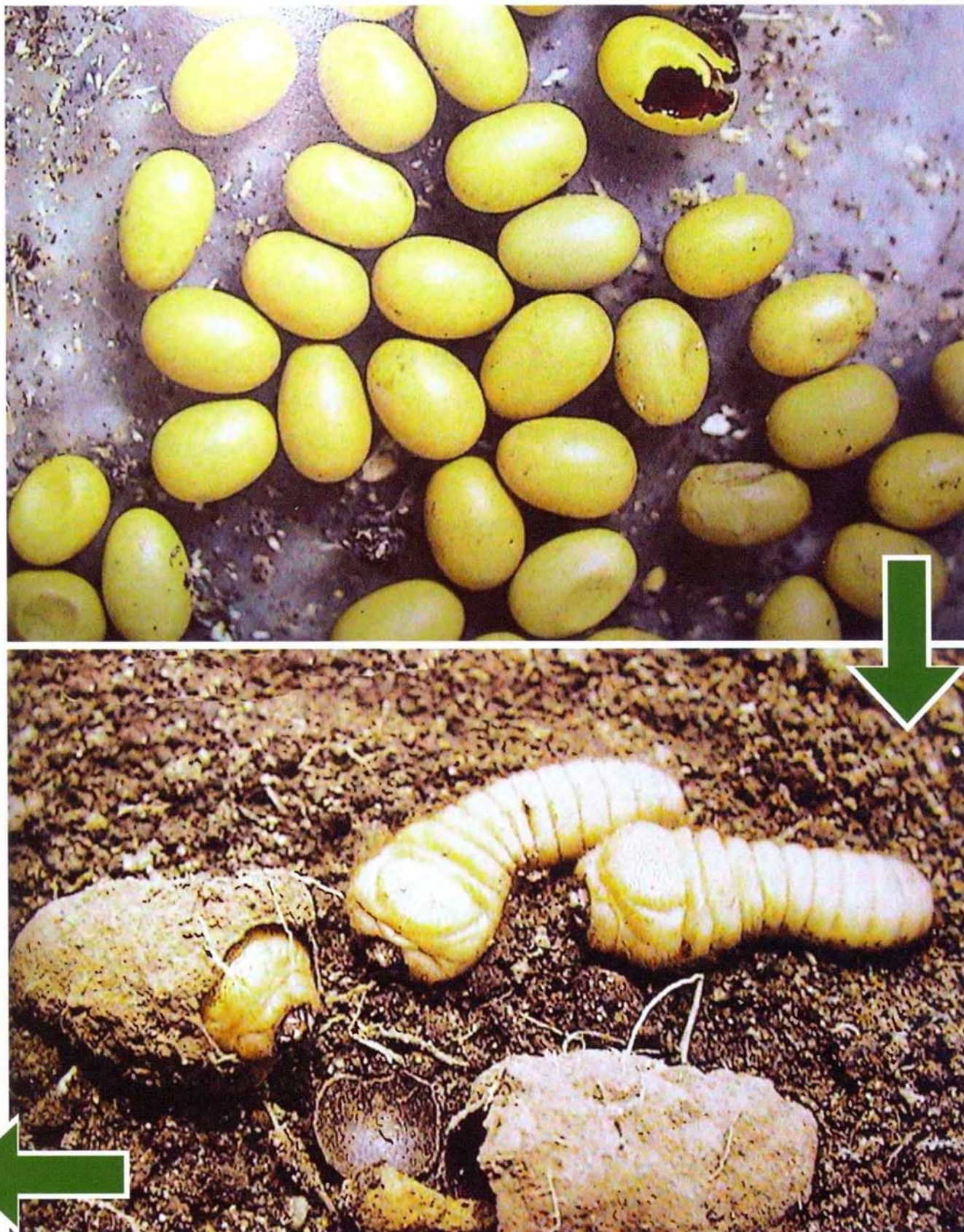
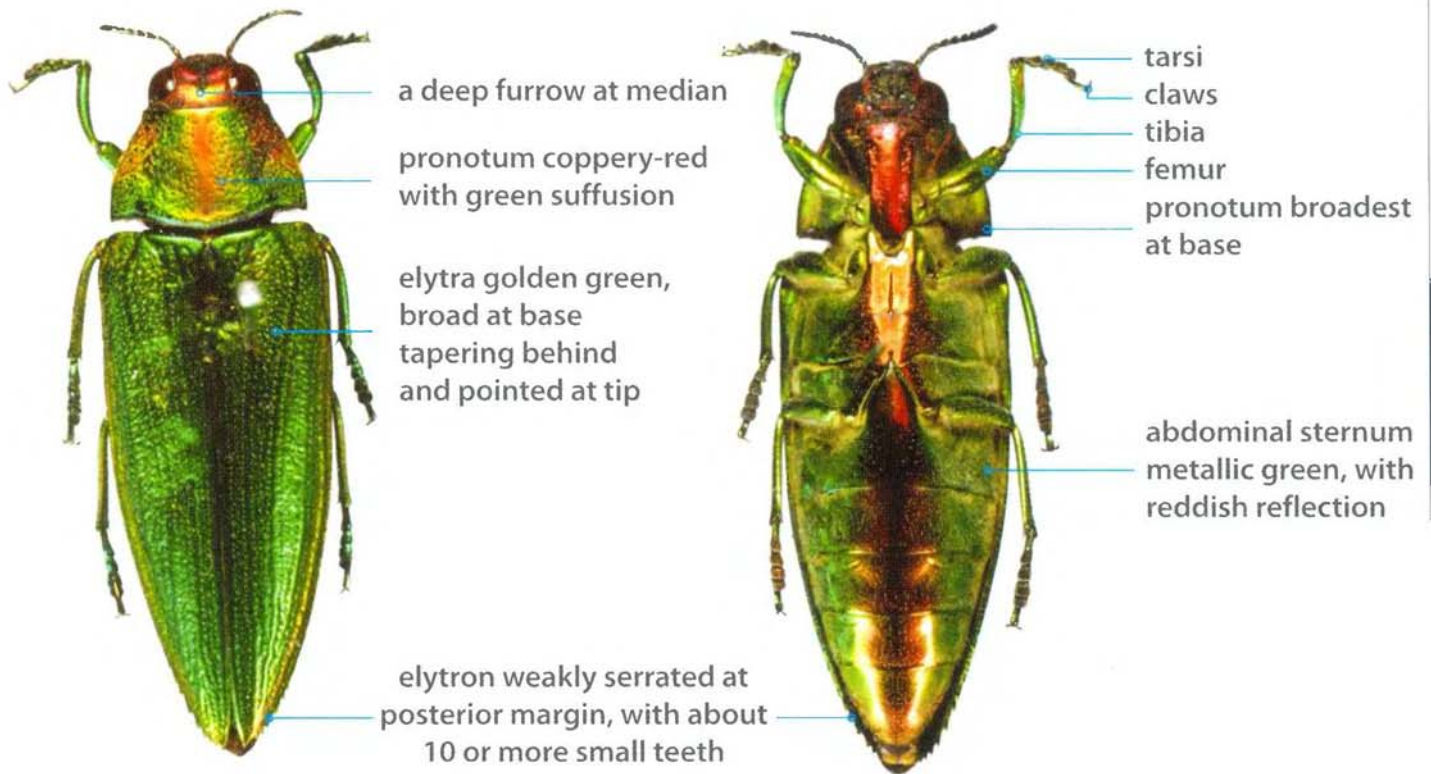


Figure 41. Life cycle of *Sternocera aequisignata punctatofaveata*, 1. adult is laying her eggs, 2. oval shaped eggs, 3. the fifth instar larvae and their cocoons, 4. pupa in its cocoon.



Figure 42. The jewel beetles; 1. *Megaloxantha gigantea*, 2. *Chrysochroa corbetti*.



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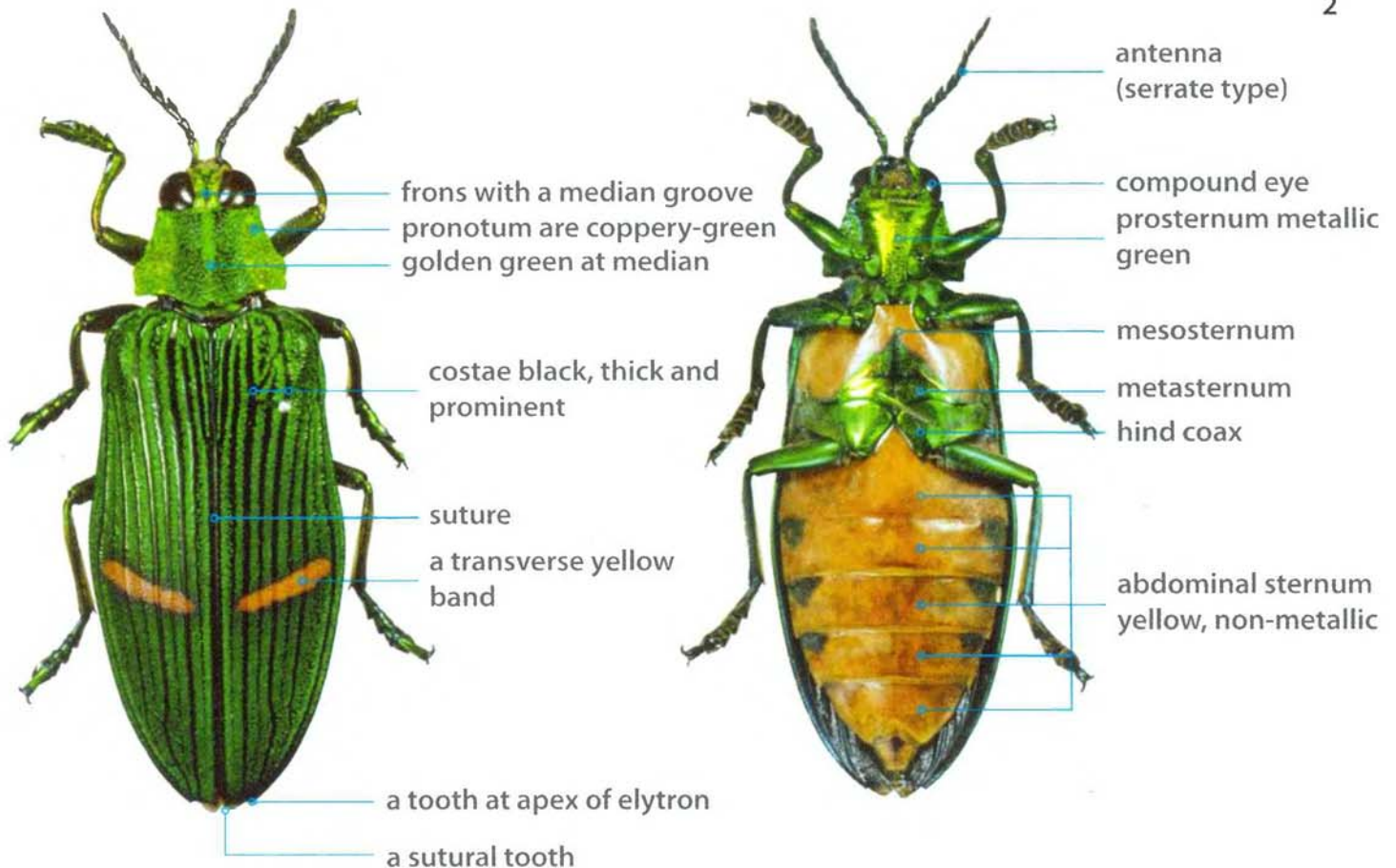


Figure 43. The jewel beetles; 1. *Micropisthus igneiceps*, 2. *Catoxantha opulenta bomeensis*

FAMILY BUPRESTIDAE

I. SUBFAMILY JULODINAE

Sternocera Eschscholtz, 1829

Entire body is golden green or metallic green, rather rounded, very convex above; mesosternum with a large tooth pointed forward; head with a longitudinal groove at median, fairly finely punctured; pronotum convex above, strongly and closely punctured; elytra with a creamy yellow spot at the basal half of each elytron; fairly finely punctured above, but rather shining.

B1. ***Sternocera aequisignata*** E. Saunders, 1866

Sternocera aequisignata punctatofaveata E. Saunders, 1866

แมลงทับกลมขาเขียว

This species, legs are metallic green or golden green differs to the other two.

Length 30-45 mm.

Distribution: Nepal, India, Cambodia, Vietnam, Laos, Thailand (Chiang Mai, Lamphun, Lampang, Bangkok, Pak Thongchai).

Host : *Albizia lucidior* (ป้านแถ), *Albizia lebbeck* (พญากษ), *Albizia procera* (ทิ้งถ่อน), *Albizia lebbeckoides* (คาง), *Pithecellobium dulce* (มะขามเทศ), *Acacia auriculaeformis* (กระถินณรงค์). Adults feed on leaves of the same food plants for the larvae and others.

B2. ***Sternocera ruficornis*** E. Saunders, 1866

แมลงทับกลมขาแดง

Similar to ***S. aequisignata*** except colored of the legs, reddish instead of metallic green.

Length 30-45 mm.

Distribution: Laos, Vietnam, Thailand especially in the northeast, while the former species is more common in the north (Nakhon Ratchasima, Chaiyaphum).

Host : Basically are the same as those for ***S. aequisignata***.

B3. ***Sternocera chrysis*** (Fabricius, 1775)

แมลงทับกลมสีทองแดง

A close related species to the preceding two, but colored form is golden brown instead of green. There were some of this species about 1 % found amongst *Sternocera* specimens from Chiyaphum.

Length 37-45 mm.

Distribution: N.E. India, Myanmar, N.E. Thailand (Chaiyaphum).

(1.4 X)



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♀ △



B1. *Sternocera aequesignata punctatofaveata*



♀



♀ △



♀ △

B2. *Sternocera ruficornis*

B3. *Sternocera chrysis*

II. SUBFAMILY POLYCESTINAE

This subfamily has about 50 genera, but each genera contains a few species. According to Dr. S. Ohmomo (2007) 25 species belonging to 11 genera are known from Thailand. Because most of them are small and some are rare I selected some species to illustrated most of photos are after him.

Acmaeodera Eschscholtz, 1829

B4. ***Acmaeodera ichikoeae*** Ohmomo, 2004

แมลงทับเล็กน้ำเงินข้างเหลือง

Head and pronotum deep blue to black with purplish tinge; elytra dark blue-purple or brown, with longitudinal yellow bands along each lateral side from humeri to anterior three-fifths connecting with a transverse yellow band from lateral sides to the middle; antennae black, sometimes with bluish purple tinge; body ventrally and legs are black. **Female** is similar to the male except body shape rather robust and antennae are shorter.

Length 8.2-9.0 mm, Holotype: 8.8 mm in length and 2.9 mm in width.

Distribution: Thailand (Dr. S. Ohmomo provided me a male Paratype, Mt. Hin Lek Phai, Hua Hin, 11.V.2003).

B5. ***Acmaeodera interrupta*** Kerremans, 1892

แมลงทับเล็กดำข้างเหลือง

Black with yellow spots, the body form is the same as the preceding species. Elytra bear longitudinal yellow bands along each lateral side from humerali, other two lateral yellow spots at beyond the middle and posterior half, with another row of five yellow spots along the suture from base to near apex of each elytron.

Length 6.7-7.9 mm.

Distribution: Thailand (Mt. Hin Lek Phai, Hua Hin).

Acmaeodera stictipennis Laporte & Glory, 1835

B6. ***Acmaeodera stictipennis coomani*** Bourgoin, 1924

แมลงทับเล็กม่วงแถบเหลือง

Black with purple-blue tinge, pronotum is narrow in front, broad and rounded at hind angle, strongly rugosely punctured there. Elytra bear longitudinal yellow or reddish-yellow bands along each lateral side from humeri to anterior three-fifths connecting with a transverse yellow band from lateral sides to the middle, the latter usually curved and turned anteriorly.

Length 9-11 mm.

Distribution: Laos, Thailand (Nan).

Cochichinula bilyi Volkovitsch, 2008

Cochinchinula Volkovitsh, 1984

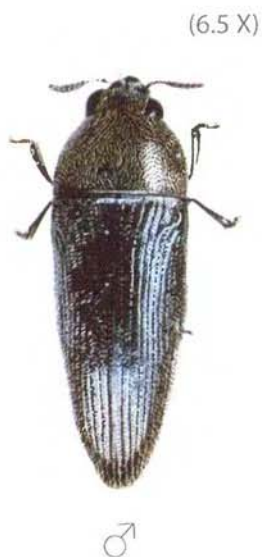
B7. ***Cochinchinula quadriareolata*** (Obenberger, 1924)

แมลงทับเล็กขนสีจุดเหลือง

Small black, body is fringed with minute yellow hairs. Elytra are grooved longitudinally, 8 grooves on each elytron, with punctures inside the grooves; black with four yellow patches, two on each elytron at anterior half and posterior half.

Length 5.2 mm.

Distribution: E. Thailand (Khao Soi Dao).

B4. *Acmaeodera ichikoeae*B5. *Acmaeodera interrupta*B6. *Acmaeodera stictipennis coomani*B7. *Cochichinula quadriareolata*B8. *Mastogenius taoi*B9. *Microacmaeodera rolciki*B10. *Odettea laosensis*

(all photos in this plates are adapted from Dr. S. Ohmomo)

Mastogenius Solier, 1850

- B8. ***Mastogenius taoi*** Toyama, 1983

แมลงทับจิ๋วตัวออกกลม

Very small, entirely black, body elongate, head rounded in front, much narrower than pronotum. Pronotum very convex rounded at sides, medium punctured throughly. Elytra parallel sided and rounded at apices, strong; punctured.

Length 2.5 mm.

Distribution: Thailand (Dr. S. Ohmomom kindly provided me a male specimen, Khao Hin Lek Phai, Hua Hin, 19.V.2004).

Microacmaeodera Cobos, 1966

- B9. ***Microacmaeodera rolciki*** Volkovitsch, 2007

แมลงทับจิ๋วฐานร่องแฉก

Black without marking, body is elongate and slim at apex, covered thinly with fine hairs. Elytra grooved longitudinally with punctures inside the grooves, the 4th groove meets an usual groove from humeral angle near the base.

Length 6.0-6.8 mm.

Distribution: Thailand (Mt. Hin Lek Phai, Hua Hin)

Odettea Baudon, 1966

- B10. ***Odettea laosensis*** Baudon, 1966

แมลงทับร่องเหลี่ยมลาว

Prothorax is coppery golden colored, rounded at side, produced at middle of base. Elytron is straight at side and turned towards apex at 1/5 from the apex, yellow with orange bordered and marked with four large black spots on each elytron and the other four at suture. This species usually gather to the flowers of Terminalia spp. A photo of female as illustrated is after Dr. S. Ohmomo (2003), 8.VI.2002, Mt Hin Lek Phai, Huan Hin, Prachuab Khiri Khan.

Length 7-9 mm.

Distribution: Thailand (Hua Hin, Chiang Mai).

Paratrachys E. Saunders, 1873

- B11. ***Paratrachys chinensis*** Obenberger, 1958

แมลงทับรูปไข่ขนขาวจีน

Black with whitish hairs on pronotum and elytra, oval shaped, very convex above. Head is large than the front margin of pronotum.

Length 4 mm.

Distribution: Thailand (Dr. S. Ohmomo provided me a male specimen, Khao Bandai It, Phetchburi, 22.II.2004).

Schoutedeniastes Burgeon 1941

= ***Polyctesis*** Marseul, 1865

- B12. ***Schoutedeniastes ohkurai*** (Akiyama & Ohmomo, 1992)

แมลงทับร่องลายเหลี่ยม

Long and slender body, head is broad, granulated, with or without yellow spots above. Pronotum is dark green and nearly black, with two pairs of yellow stripes at lateral margins and at both sides of the median line. Elytra are black with yellow markings, deeply grooved longitudinally and strongly punctured inside the grooves, ten or more grooves on each elytron.

Length 14-15 mm.

Distribution: N. Thailand (Sansai, Mae Tha).



(8.5 X)



♂

(after Dr. S. Ohmomo)
B11. *Paratrachys chinensis*

(5.3 X)



♀

(after Dr. S. Ohmomo)
B13. *Ptoshima strandi*

(3.0 X)



♂



♂



♀



♀ △

B12. *Schoutedeniastes ohkurai*

(3.0 X)



♂



♀

B14. *Strigoptera bimaculata*

Ptosima Serville, 1833

B13. *Ptosima strandi* Obenberger, 1924

แมลงทับร่องทรงกระบอก

Black, smooth and shining, body form is long and slender, broad in front and slim at the end of abdomen. Eyes are large and widely separated; elytra with punctured dot-lines, but smooth and shining.

Length 8.5 mm.

Distribution: Thailand (Mt. Hin Lek Phai, Hua Hin).

Strigoptera Dejean, 1833

B14. *Strigoptera bimaculata* (Linnaeus, 1758)

แมลงทับร่องฟ้าแดง

Head is small, rounded, metallic bluish-green; eyes widely separated, without a median groove at frons; pronotum metallic green with a broad median groove near the base; elytra metallic greenish-blue, strongly grooved longitudinally, eight grooves or more of each elytron, and with a broad purplish-red patch across the middle.

Length 18-24 mm.

Distribution: India, Vietnam, Cambodia, Malaysia, Indonesia, Thailand (Bangkhen, Pak Thongchai, Phu Kae).

III. SUBFAMILY CHRYSOCHROINAE

In Thailand, 16 genera 50 species are known. I have illustrated 36 species in this book. The genus *Megaloxantha* contains the largest species of the world.

Catoxantha Solier, 1833

B15. *Catoxantha opulenta opulenta* (Gory, 1832)

แมลงทับแถบมรกต

Head and pronotum are coppery-green, with golden green at median of pronotum. Elytra are dark bluish-green, with coppery-purple reflection, costae black, thick and prominent, a transverse yellow band on each elytron at behind the middle, not reach the suture on the outer margin. Abdominal sternum is yellow, non-metallic. Subspecies *borneensis* is slightly smaller, the sides of abdominal sternite 2 to 5 marked with black whereas those of *opulenta* without black markings.

Length 44-55 mm.

Distribution: India, W. Malaysia, Indonesia, S. Thailand (Than To - Yala).

Host : *Lagerstroemia speciosa* (อินทนิลน้ำ), *Chukrasia tabularis* (ยมหิน).

B15a. *Catoxantha opulenta opulenta* (Gory, 1832)

Distribution: India, S. Thailand

(Kanchanaburi, 1 male, 13.i.1930, Bangkok, in coll. Bro. Amnuay Pinratana).

B15b. *Catoxantha opulenta borneensis* Y. Kurasawa, 1993

Distribution: Sabah, N. Kalimantan, S. Thailand

(1 male, 10.i.1983, Trang, in coll. Bro. Amnuay Pinratana).

B16. *Catoxantha pierrei* Descarpentries, 1948

Similar to the preceding species, but head is coppery red, pronotum purplish green at the middle and coppery red at sides. Subspecies *pierrei* is slightly larger, the yellow transverse band broadest at lateral and narrower near the suture than that of *chunrami*.

Length 50-57 mm.

B16a. *Catoxantha pierrei pierrei* Descarpentries, 1948

Distribution: N. Thailand (1 male, 1.VIII.84, Chiang Mai, in coll. Bro. Amnuay Pinratana).

B16b. *Catoxantha pierrei chunrami* Y. Kurosawa, 1993

Distribution: (1 male, 4.VI.89, Khao Sao Dao Tai, Chanthaburi, in coll. Bro. Amnuay Pinratana).

(1.3 X)



♂

B15a. *Catoxantha opulenta opulenta*

♂ Δ

B15b. *Catoxantha opulenta borneensis*

♂ Δ

(1.6 X)



♂

B16a. *Catoxantha pierrei pierrei*

♂

B16b. *Catoxantha pierrei chunrami*

(1.6 X)



♀

B17. *Chalcophora yunnana*

Chalcophora Serville, 1833

B17. ***Chalcophora yunnana*** Fairmaire, 1888

แมลงทับยูนนาน

Dark brown to black, head with a longitudinal depression at frons; pronotum strongly punctured along with the five smooth costae; elytra rough and strongly punctured along the smooth four costae, with two depressed spots at 1/3 and 2/3 from the base, the 2nd broken costa jointing with the 3rd costa just after the 2nd spot and extending to joint with the 1st costa before reaching the apex of each elytron; abdominal sternum black, shining.

Length 20-29 mm.

Distribution: Japan, Taiwan, China, N. Thailand (Samoeng, Sansai).

Chrysochroa Solier, 1833

Body not very convex above; head generally with a deep furrow at median above frons; eyes large, rather close together, the distance not more than the length of an eye; elytra broader than pronotum, slim or rounded at tip.

B18. ***Chrysochroa baudoni*** Descarpentries, 1964

แมลงทับสายรุ้ง

Head and pronotum are metallic green with reddish reflection; elytra metallic green, with four-raised costae, with a red stripe between costae 2 and 3; finely serrated at posterior margins and pointed at tip; abdominal sternum metallic green with red reflection especially near the tip.

Length 30 mm.

Distribution: Laos, N. Thailand (Mae Tha – Lamphun, San Sai, Mukdahan).

B19. ***Chrysochroa buqueti*** (Gory, 1833)

Chrysochroa buqueti rugicollis E. Saunders, 1866

แมลงทับหัวทับทิม

Head is metallic purple; pronotum metallic purple red; elytra dark purple about two-fifths from apices and creamy yellow at the basal part, with a large dark purple spot in the middle of the yellow patch, vary in sizes and shapes, rather smooth, non serrated near the apical margins; abdominal sternum metallic purple.

Length 40-50 mm.

Distribution: Laos, Thailand (Chiang Dao, Wiang Pa Pao).

Host : *Mangifera indica* (มะม่วง), adults feed on leaves of ***Pterospermum acerifolium*** (ปอหู่ช้าง).

B20. ***Chrysochroa corbetti*** Kerremans, 1893

แมลงทับเจ็ดสีขุนลาว

Head is metallic green tinted with purple; pronotum purple-red at sides, with a broad metallic green or blue stripe at median, narrow in front and broader behind; elytra bearing two large blue spots at the front half and behind half of each elytron, their borders reaching the suture and the lateral margins, with metallic yellow-orange bands and greenish suffusion at base and apex, and a broad creamy yellow band at middle, posterior margins smooth, non serrated and pointed at apex; abdominal sternum metallic purple.

Length 37-40 mm.

Distribution: Myanmar, N. Thailand (Wiang Pa Pao).

Host : Adults feed on leaves of ***Pterospermum acerifolium*** (ปอหู่ช้าง).

(1.9 X)

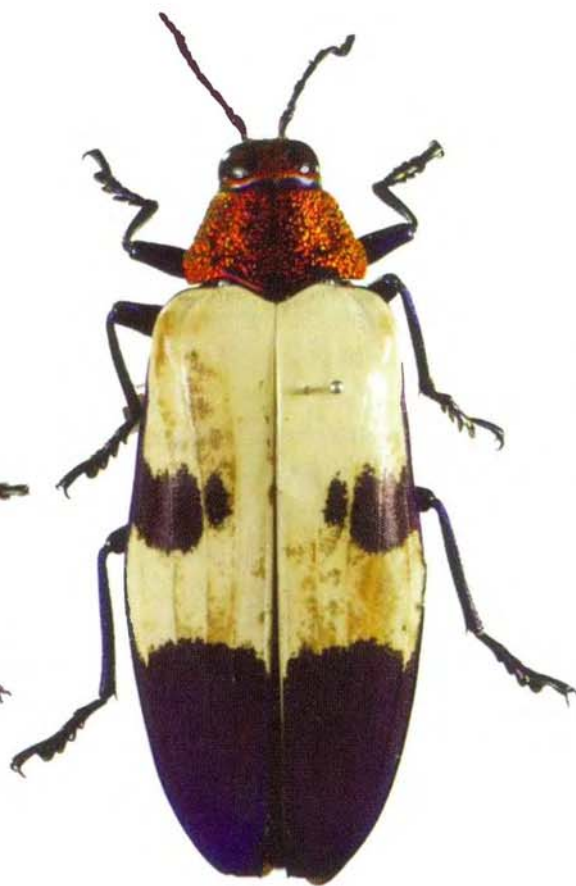


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(1.5 X)



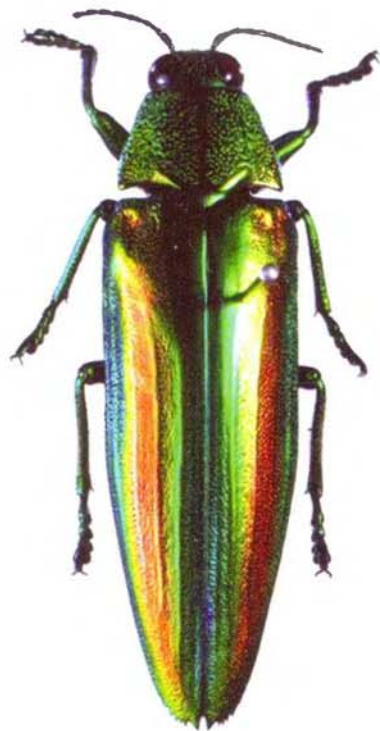
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♀

B19. *Chrysochroa buaueti rugicollis*

(1.6 X)



♀



♂



♀

B18. *Chrysochroa baudoni*

B20. *Chrysochroa corbetti*

B21. *Chrysochroa ephippigera* (White, 1893)

แมลงทับรู้งวังเหนือ

Head is metallic green, tinted with coppery-red at middle of the frons; pronotum coppery-red at sides with a broad blue stripe at median; elytra metallic green, the basal and apical parts tinted with two large coppery-red spots of each elytron; a broad yellow patch across the middle, and with two narrow deep blue bands in front and behind the yellow patch.

Length 37-39 mm.

Distribution: N. Vietnam, India, N. Thailand (Wang Neua - Lampang).

Host : Cratoxylon (เต้า).

B22. *Chrysochroa fulgens* Degeer, 1778

แมลงทับรู้งเขียวกาญจน์

Head metallic green, tinted with coppery red at middle of frons; pronotum metallic green, with a longitudinal blue stripe at median and tinted with coppery-red at sides; elytra metallic green, with a broad yellow patch across the middle, the front margin of the patch not in a straight line, tinted with two large coppery-red spots near the base and near apex of each elytron, apical margins non serrated, with two small spines pointed at apex of each elytron; abdominal sternum metallic reddish with greenish reflection.

Length 36-38 mm.

Distribution: Myanmar, W. Thailand (Kanchanaburi).

B23. *Chrysochroa fulminans* Fabricius, 1787

แมลงทับปลายแดง

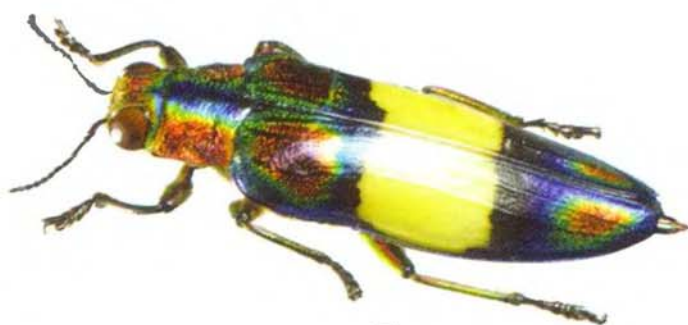
Head and pronotum are metallic green; elytra metallic green, tinted with red at apices, apical margins serrated; abdominal sternum metallic yellow to reddish-yellow towards the apical end.

Length 33-37 mm.

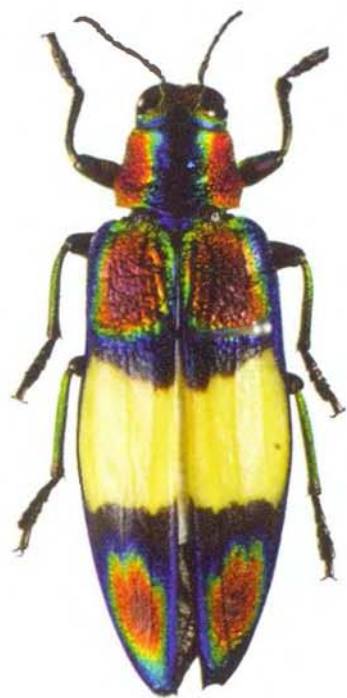
Distribution: Indonesia, Malaysia, the Philippines, S. Thailand (Than To - Yala).

Host : Kapok (นุ่น), cacao (โกโก้), citrus (ส้ม), *Albizia* (พญานักษ์).

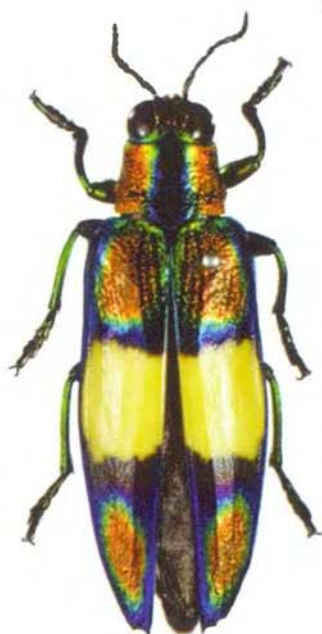
(2.0 X)



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♂



♂



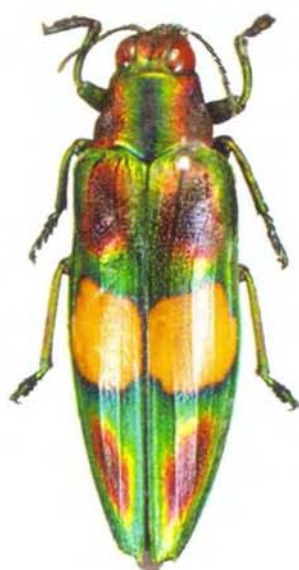
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♂ △

B21. *Chrysochroa ephippigera*

(1.4 X)



♂



♂



♂



♂ △

B22. *Chrysochroa fulgens*B23. *Chrysochroa fulminans*

B24. *Chrysochroa mnischechii* H. Deyrolle, 1861

แมลงทับทองย้อย

Head and pronotum are metallic purple blue; elytra purple blue, with two transverse yellow patches at the base which running down at sides to nearly middle of body length and another patch at behind the middle. Elytra are serrated at apices. Abdominal sternum metallic purple blue.

Length 40-50 mm.

Distribution: Vietnam, Myanmar, Laos, Thailand (Mae-tha, Lamphun, Wang Neua – Lampang, Khon Kaen). Another rare form of this species known, the green colored form instead of purple blue, from Kanchaburi which believed to be the same species. Adults feed on leaves of *Pterospermum acerifolium* (ปอหู่ช้าง).

B25. *Chrysochroa viridisplendens* Thery, 1897

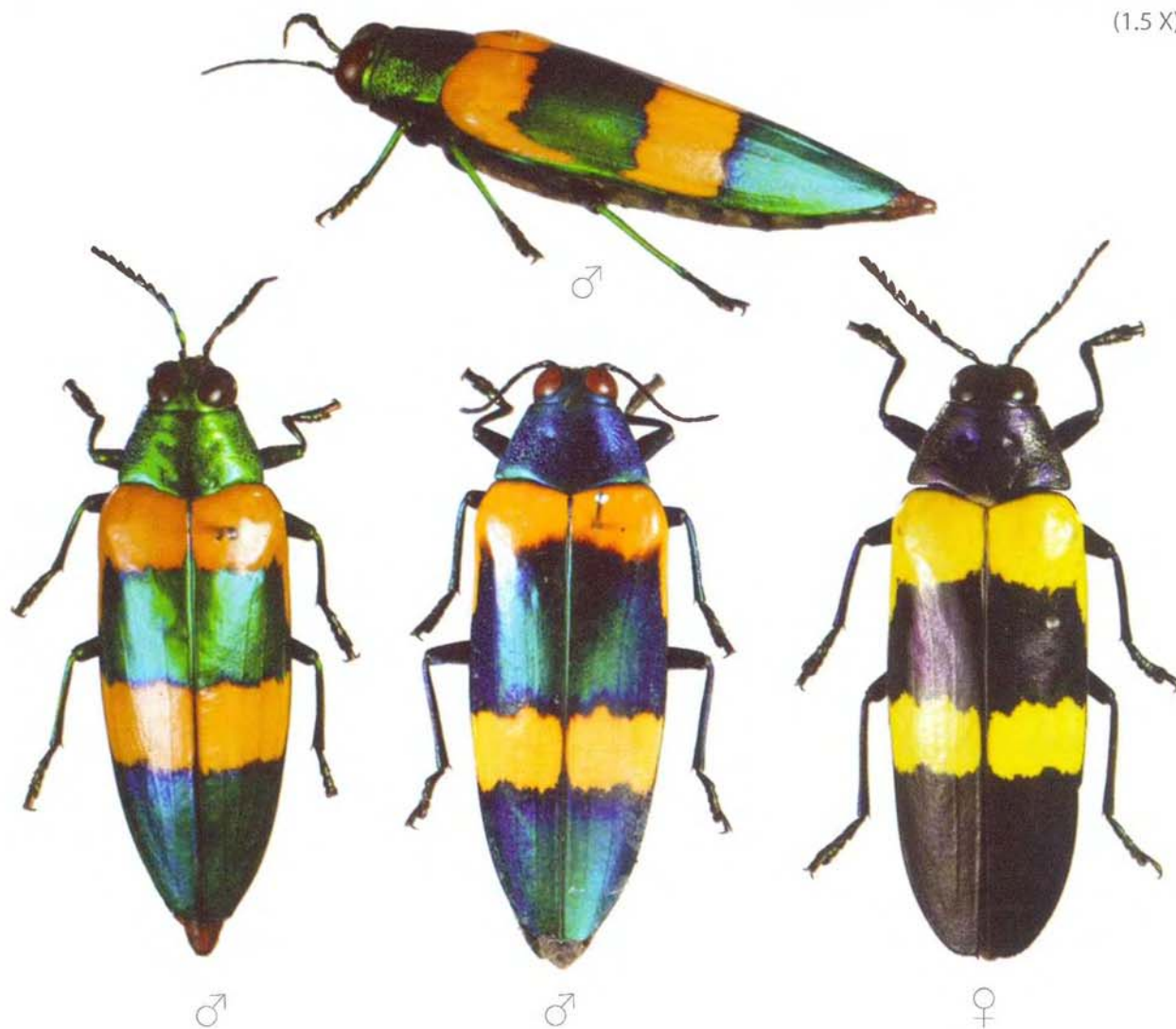
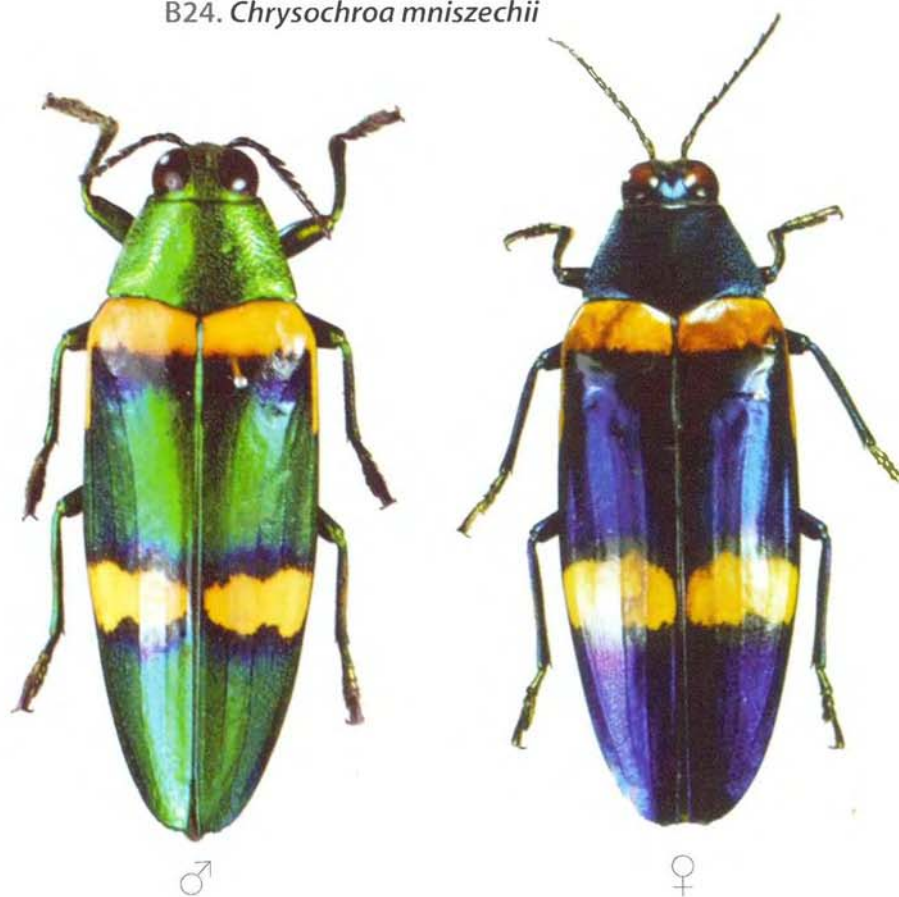
แมลงทับทองล้อม

Similar to *C. mnischechii*, but differs in yellow basal patch narrower and not extending downwards at sides of elytra.

Length 40-50 mm.

Distribution: Thailand (Khao Bandai It - Phetchaburi).

(1.5 X)

B24. *Chrysochroa mnischechii*B25. *Chrysochroa viridisplendens*

- B26. *Chrysochroa parryi* Saunders, 1867
Chrysochroa parryi unnoi Y. Kurosawa, 1978

แมลงทับสามมุมแดง

Head metallic green, pronotum metallic green, fairly finely punctured, with a triangular red spot at posterior angle of each side; elytra metallic green, rather smooth, with weak costae and fine punctured between each pair of them, red at apices, the apical margins serrated and pointed at apex; abdominal sternum metallic green, with red reflection and darker at the last 3-4 segments.

Length 36 mm.

Distribution: Sri Lanka, Malaysia, Thailand (Phu Kae - Saraburi, Nakhon Si Thammarat).

- B27. *Chrysochroa purpureiventris* Deyrolle, 1864
Chrysochroa purpureiventris marinae Lander, 1991

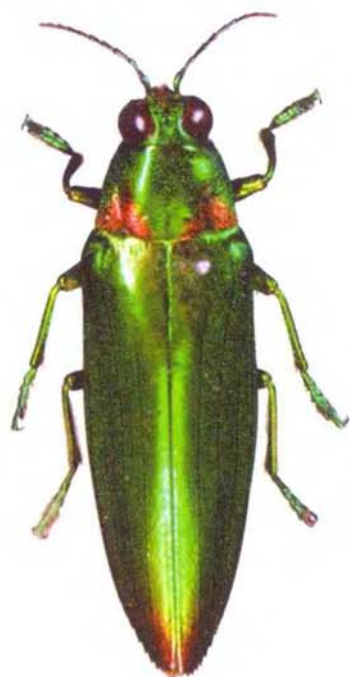
แมลงทับทองสมุทร

Head is metallic green, tinted with coppery red at the frons; pronotum metallic green, with coppery-red suffusion especially the front margin; elytra metallic green, with reddish suffusion, four raised costae on each elytron, apical margins smooth, with a single spine pointed at tip; abdominal sternum metallic green with reddish reflection.

Length 35-42 mm.

Distribution: Laos, Thailand (Mae Tha, Sansai).

(1.5 X)



♂



♂ Δ

B26. *Chrysochroa parryi unnoi*



♂



♂ Δ



♀



♀

B27. *Chrysochroa purpureiventris marinae*

B28. ***Chrysochroa rajah*** Gory, 1840

แมลงทับราชา

Head and pronotum are metallic green, pronotum with two coppery-red spots at posterior angles; elytra rather smooth, fairly finely punctured among the weak four costae of each elytron, with a red-longitudinal stripe running between costae 2 and 3, apical margins serrated and pointed at tip; abdominal sternum metallic green, with reddish reflection.

Subspecies ***wiwuti***, the name is dedicated to Dr. Wiwut Daengsubha, who supported Dr. Ohmomo for his trip in Thailand. It differs from *thailandica* as follows: V-shape sculpture on vertex not over the end line of eyes in the former subspecies; around the head and anterior half of pronotum brilliant green with bluish tinge while *thailandica* without bluish tinge; middle of abdominal sternites 1-2 and whole of abdominal sternites 3-5 cupreous red while in the latter whole of abdominal sternites and prosternal process cupreous red. Holotype female, 23.V.1992, Khao Soy Dao, Chantahaburi, Dr. S. Ohmomo leg, 40.4 mm in length and 12.8 mm in width.

Length 32-48 mm.

Host : Adults feed on leaves of ***Pterospermum acerifolium*** (ปอหู่ช้าง).

B28a. ***Chrysochroa rajah thailandica*** Y. Kurosawa, 1978

แมลงทับราชาไทยแลนด์

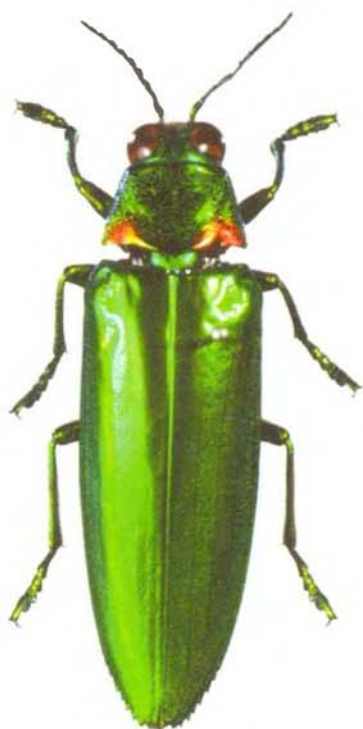
Distribution: Laos, N. Thailand (Chiang Dao, Wiang Papao, Sansai, Phrae, Mae Tha).

B28b. ***Chrysochroa rajah wiwuti*** Ohmomo, 2003

แมลงทับราชาวิวัฒน์

Distribution: Thailand (Dr. S. Ohmomo kindly provided me a Paratype male, 20.V.2002, Khao Kitchakud, Chanthaburi as illustrated).

(1.5 X)



♂



♂ △



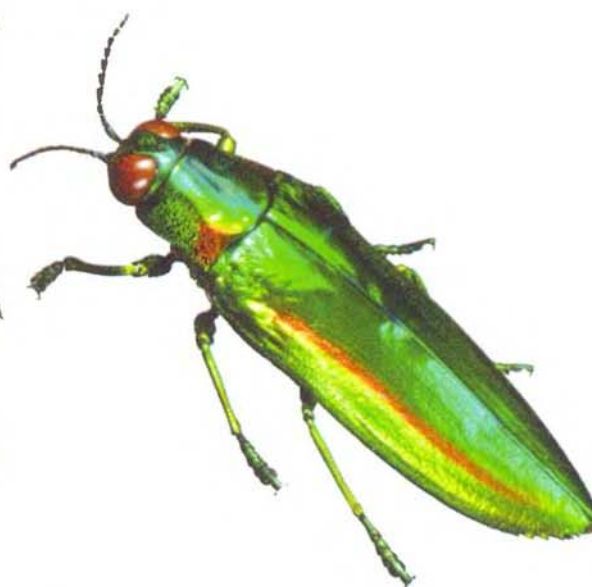
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B28a. *Chrysochroa rajah thailandica*

♂



♂ △



♂

(Paratype male, specimen provided by Dr. S. Ohmomo)

B28b. *Chrysochroa rajah wiwuti*

B29. *Chrysochroa saundersi* E. Saunders, 1866

แมลงทับอำพันแถบเขียว

Head and pronotum are coppery-gold, with green reflection; elytra smooth, coppery-gold with green suffusion, a broad yellow patch across elytra at behind the middle, apical margins serrated; abdominal sternum metallic reddish gold.

Length 45-55 mm.

Distribution: Laos, Thailand (Wiang Pa Pao).

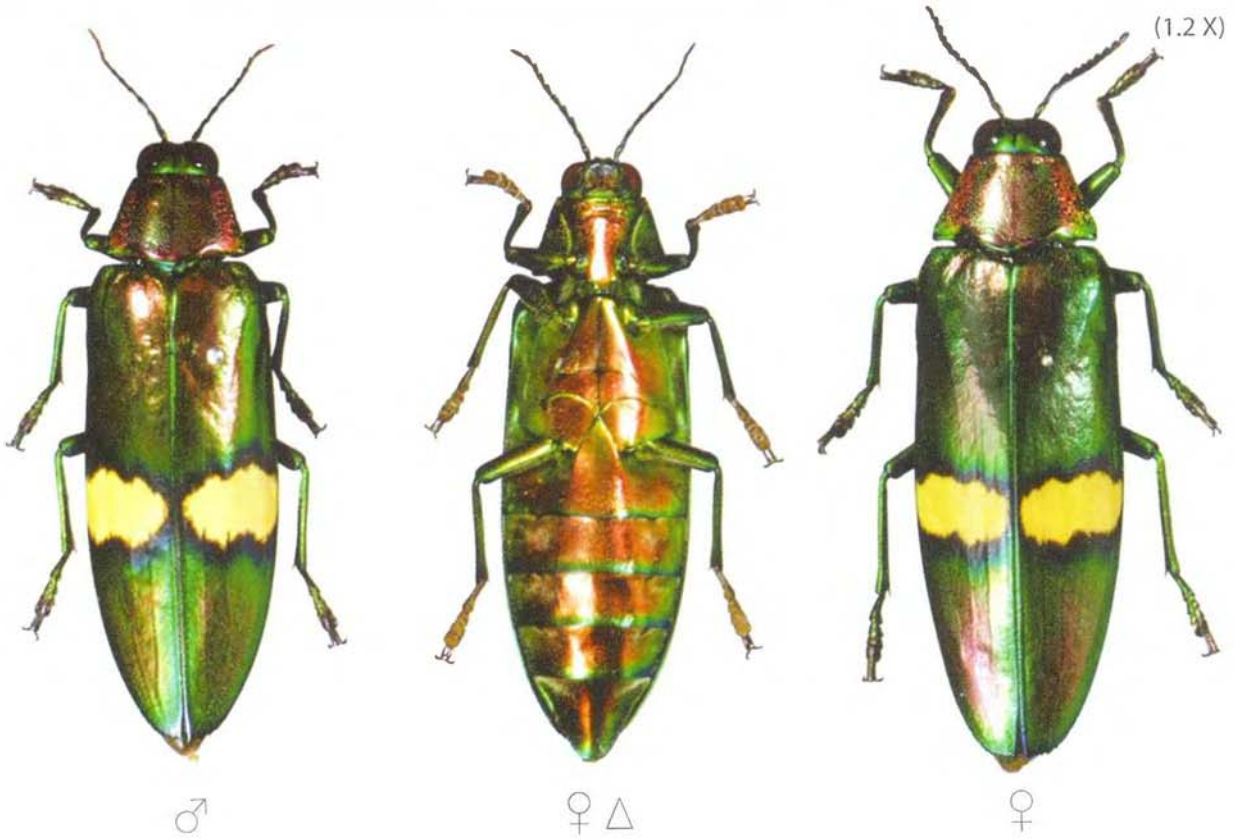
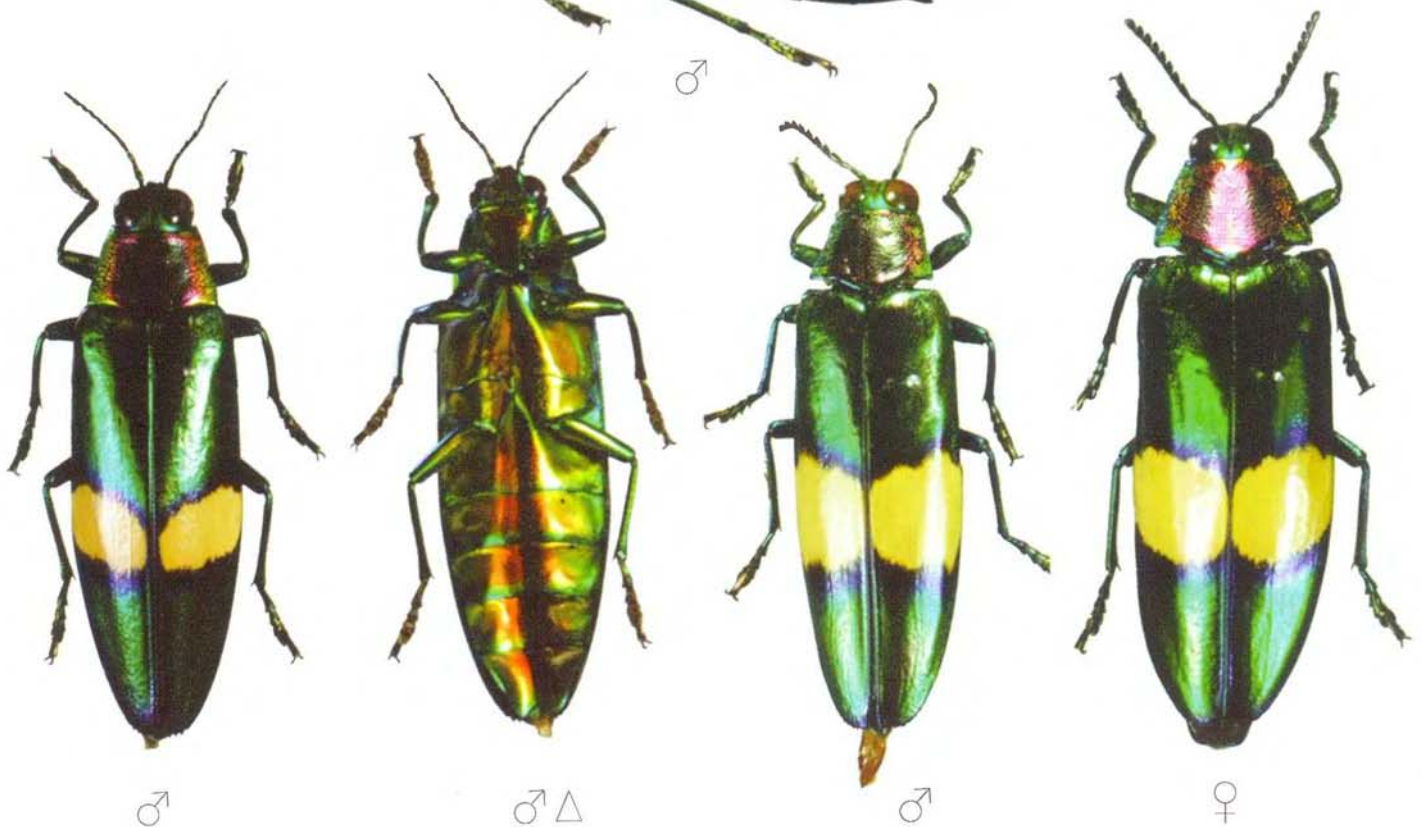
B30. *Chrysochroa edwardsi* Hope, 1843

แมลงทับอำพันแถบกลม

Elytron is uniformly golden green except the ivory band which is rather large and rounded. The specimens as shown in the Thai stamps identified as *Chrysochroa maruyamai* was a doubtful species name and it might be belonged to this species.

Length 45-55 mm.

Distribution: Laos, Thailand (Sansai).

B29. *Chrysochroa saundersii*B30. *Chrysochroa edwardsi*

B31. *Chrysochroa rondoni* Descarpentries, 1963

แมลงทับอำพันแถบหยัก

Head is golden green, with a deep and wide medium groove. Pronotum is deeply reddish purple, with a large blackish purple median marking. Elytron is dark bluish green, with an ivory band of which the front and back borders of the band being zigzag. Legs are deeply golden green, with golden navy blue ventrally. The species description based on male specimen from Laos and female specimen from Cochin, China. It is close similar to a species from Laos, *C. tonkinensis*, but referring to Dr. S. Ohmomo (2008) the body beneath is deeply reddish-purple whereas that of *C. tonkinensis* is golden brown.

Length male 40-45 mm, female 46-48 mm.

Distribution: S. China, Laos, Thailand (Phu Phan - Sakon Nakhon, 5 males, 18.V.2007, S. Nakamura leg.; 1 female, 19.V.2007, S. Tsuyuki leg.; 2 females, 19.V.2007, T. Kurihara leg.)

B33. *Chrysochroa vittata* Fabricius, 1774

แมลงทับแถบทอง

Head metallic green, tinted with red at frons; pronotum metallic green, with two coppery-red spots at posterior angles; elytra metallic green, strongly punctured among the four raised costae of each elytron, a longitudinal coppery-red stripe running between costae 2 and 3, apical margins serrated; abdominal sternum metallic green, with reddish reflection.

Length 35-43 mm.

Distribution: India, Myanmar, Laos, China, Thailand (Wiang Pa Pao, Mae Tha, Phu Kae).

Cyalithus Thomson, 1878

Head almost vertical in front, with a narrow deep groove at median, strongly and densely punctured above; pronotum strongly punctured except a narrow trace of smooth median stripe; elytra moderately to strongly punctured, with small serrate teeth at posterior margins.

B33. *Cyalithus cochici* Descarpentries, 1948

แมลงทับกระสวยแดง

Head is deep red tinted with greenish at base, strongly punctured; eyes large, widely separated; pronotum red, with greenish at lateral margins; elytra deep blue with purplish-red suffusion at lateral margins and golden green at posterior margins.

Length 17 mm.

Distribution: Vietnam, N. Thailand (Wiang Pa Pao).

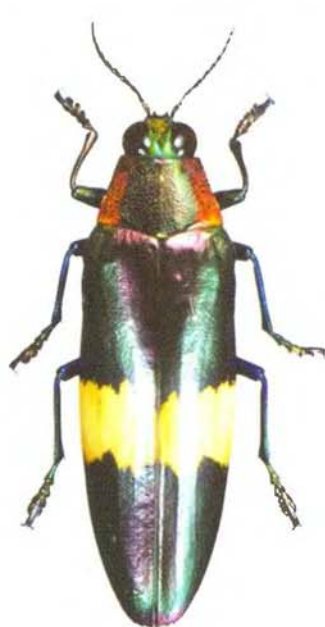
B34. *Cyalithus vitalisi* (Bourgoin, 1922)

แมลงทับกระสวยทอง

Head golden red, with a short oblique ridge behind each antennal insertion; eyes widely separated; pronotum slightly broader at base than in the front; elytra golden green with four weak costae, costae 2 and 3 not jointing together before apex of each elytron.

Length 18-22 mm.

Distribution: N. Vietnam, Thailand (Mae Tha, Sansai).



♂

(Specimen provided by Dr. S. Ohmomo)



♂ Δ



♀

(after Dr. S. Ohmomo)

(1.2 X)

B31. *Chrysochroa rondoni*

(1.4 X)



♂



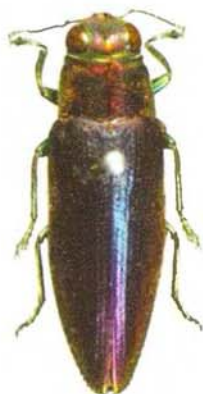
♂ Δ



♀

B32. *Chrysochroa vittata*

(2.2 X)



♂

B33. *Cyalithus cochici*

♂

B34. *Cyalithus vitalisi*

Demochroa White, 1859

B35. **Demochroa gratiosa** Deyrolle, 1864

Demochroa gratiosa bowringi Waterhouse, 1904

แมลงทับปลายใบอ่อน

Head and pronotum metallic green, with coppery reflection on the latter, with a broad dark metallic-green stripe at median, broader behind than in the front; elytra with four raised costae of each elytron, dark green, with narrow bright golden green markings at base, tip, lateral margins and at suture from the base to the middle, with also a broad yellow band across the elytra at behind the middle; abdominal sternum metallic blue, green and golden yellow at the tip. Subspecies **bowringi** with the inner border of the yellow band in a straight line whereas that of the **gratiosa** convex near the lateral margin on each elytron.

Length 30-34 mm.

B35a. **Demochroa gratiosa bowringi** Waterhouse, 1904

แมลงทับปลายใบอ่อนแถบเว้า

Distribution: India, Malaysia, Indonesia, Thailand (Prachuap Kiri Khan, Kanchanaburi).

B35b. **Demochroa gratiosa gratiosa** Deyrolle, 1864

แมลงทับปลายใบอ่อนแถบพอง

Distribution: Malaysia, Indonesia, S. Thailand (Trang).

Evides Serville, 1833

B36. **Evides fairmairei** Kerremans, 1908

แมลงทับสันขวางสีทอง

Head metallic green, with reddish reflection, a groove between eyes; pronotum metallic green with reddish reflection, narrow at front and broadest at behind, strongly punctured above; elytra metallic green, with four raised costae, some irregular transverse ridges between costae 1 and 2, 2 and 3, and between the suture and costa 1, with reddish reflection along costae 1 and 4; abdominal sternum metallic green, with reddish reflection.

Length 23 mm.

Distribution: Laos, N. Vietnam, N. Thailand (Wiang Pa Pao, Chaiyaphum).

Iridotaenia Deyroile, 1865

B37. **Iridotaenia igneiceps** E. Saunders, 1866

แมลงทับปลายหอกเขียว

Head purplish-red, with a deep furrow at median between eyes, pronotum green with reddish-gold suffusion and a narrow groove at median; elytra golden green, broad at base tapering behind and pointed at tip, strongly serrated at 2/3 from the base to apex of each elytron.

Length 28-40 mm.

Distribution: Laos, Cambodia, N. Thailand (Wiang Pa Pao).



♂

B35a. *Demochroa gratiosa bowringi*

♂ △



♂

B35b. *Demochroa gratiosa gratiosa*

(1.6 X)



♂



♂ △

B36. *Evides fairmairei*

♀

(2.1 X)



♂



♂



♀

B37. *Iriotaenia igneiceps*

(1.4 X)

B38. *Iridotaenia chrysostoma* H.Deyrolle, 1864

แมลงทับปลายหอกแก้มแดง

Small metallic green, similar to next species, but the elytra tinge with a narrow golden yellow in the middle of each elytron while the next species elytra with broader coppery red on each elytron. Pronotum is dark green at middle, coppery red broadly at lateral sides. Elytra are strongly serrated at apices and along the borders to apical one-fourth.

Length 16 mm.**Distribution:** Cameron Highland - W. Malaysia, Peninsular Thailand

(1 male specimen, Nakhon Si Thammarat, 6.X.1973, in coll. Kasetsart University).

B39. *Iridotaenia tonkinea* Théry, 1922

แมลงทับปลายหอกแดง

Metallic green, with coppery red tinge on pronotum and elytra except the lateral borders and suture remaining green, underside of body and legs green. Body is rather slim and long; pronotum produced at the middle; elytra strongly serrated at apices and along the borders to apical one-third.

Length 16.5-23mm.**Distribution:** Tam Dao - N. Vietnam, Thailand (Fang - Chiang Mai, 7.V.1992). in coll. of the author; 1 male, 1.vi.1991, Wiang Pa Pao, in coll. Dr. S. Ohmomo).*Lampetis* Dejean, 1833

Complex colored including golden green, red, coppery-red and purplish-red. Head is slightly depressed and strongly sculptured at frons; eyes widely separated, the distance of the eyes more than a diameter of an eye. Pronotum is much broad at base than the front, slightly produced backwards at posterior angles and slightly convex at the middle of the base, strongly punctured above, and strongly and rugosely punctured at sides; elytra strongly grooved and strongly punctured throughout, densely at lateral margins.

B40. *Lampetis affinis* E. Saunders, 1866

แมลงทับสลักลายม่วง

Head is golden red; pronotum reddish-purple with greenish suffusion at sides; elytra deep purple marked with metallic green at base and above the suture from the base to the middle, with 5-6 deep grooves.

Length 19-20 mm.**Distribution:** Myanmar, Cambodia, Laos, Vietnam, Thailand (Mae Tha, Sansai).B41. *Lampetis psilopteroides* E. Saunders, 1866

แมลงทับสลักลายเขียว

Head golden green; pronotum coppery-red at the middle and golden green all around; elytra golden green, more green along the suture, at base and along the lateral margins, with a few complete grooves near the suture and moderately punctured inside the grooves, strongly and rugosely punctured near the lateral margins.

Length 25-29 mm.**Distribution:** Myanmar, Laos, Thailand (Wiang Pa Pao, Samoeng).



(2.4 X)



♂

B38. *Iriotaenia chrysostoma*

♂

B39. *Iriotaenia tonkinea*

♂ △

(1.8 X)



♂



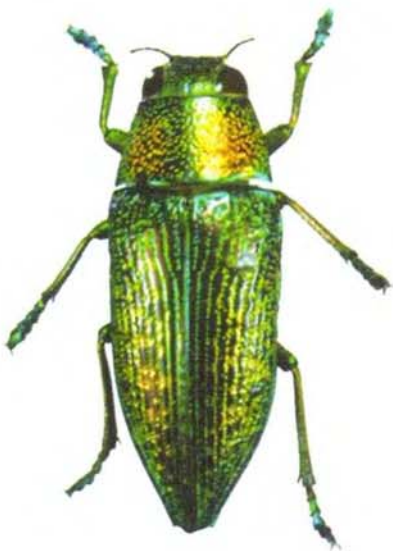
♂



♂ △

B40. *Lampetis affinis*

♀



♂



♂ △

B41. *Lampetis psilopteroides*

♀

B42. *Lampetis puncticollis* E. Saunders, 1866

แมลงทับสลักลายตาล

Head reddish-brown, with a short longitudinal ridge at median of the frons; pronotum coppery-brown with greenish at base and at sides; elytra brown or coppery brown with golden-green markings, with 5-6 complete grooves and with a series of ten or more golden-yellow spots above the intervals of the grooves, between 2 and 3, 4 and 5 and also some spots near lateral margins.

Length 31 mm.**Distribution:** India, Laos, Thailand (Kanchanaburi).B43. *Lampetis viridicuprea* E. Saunders, 1866

แมลงทับสลักลายแดง

Entirely deep red with greenish suffusion above; head with a short longitudinal ridge at median of the frons; pronotum strongly rugosely punctured; elytra with a few complete grooves near the suture and strongly punctured inside the grooves, very strongly rugosely punctured laterally.

Length 21-28 mm.**Distribution:** Thailand (Mae Tha - Lamphun).**Host:** Eucalyptus.*Megaloxantha* Kerremans, 1902

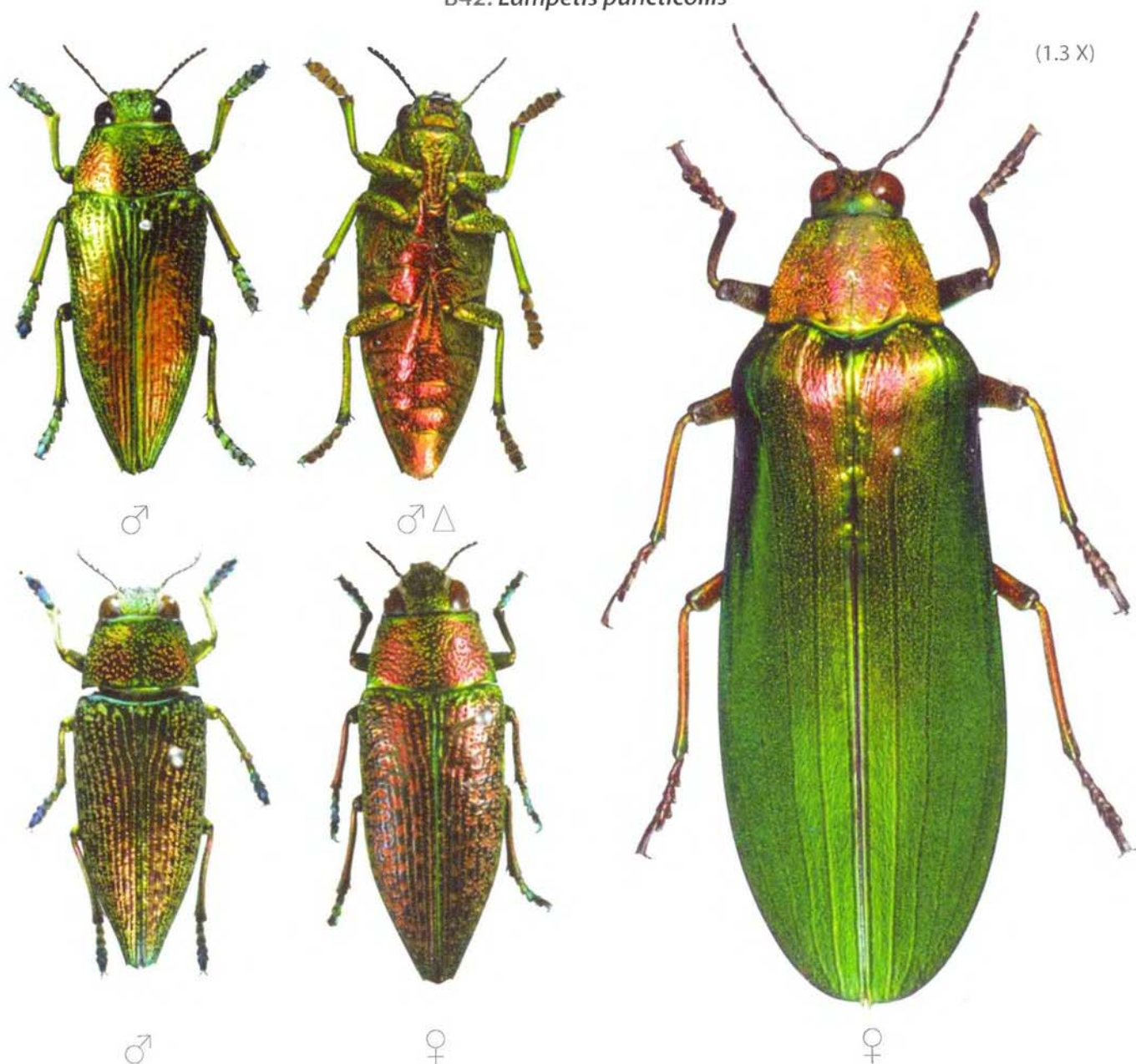
Elongate, large sized, metallic green, blue or purple green; head and pronotum dark metallic green, broadest posteriorly, with a large yellow triangular spot at posterior angle of each side; elytra metallic green, with a yellow patch at post-median of each elytron; abdominal sternum yellowish colored, non-metallic.

B44. *Megaloxantha concolor* Y. Kurosawa, 1978

แมลงทับนางพญาเอกราช

It is a very large species and considered to be the largest one in the world. While other *Megaloxantha* spp. are relatively smaller and shorter with the length about 65-72 mm. Elytra are golden green, suffused with red at bases and pronotum, without broad white spot markings. 1 female obtained from Kaeng Krachan, Petchaburi, 21.VII.2006, in the author coll., local catcher, not confirm the exact locality, but near the Thai and Myanmar border. This is the first record for Thailand and this specimen is probably the largest one of this family in the world.

Length female 77 mm.**Distribution:** W. Malaysia, S. Myanmar, Thailand.

B42. *Lampetis puncticollis*B43. *Lampetis viridicuprea*B44. *Megaloxantha concolor*

B45. *Megaloxantha brunnea* (Saunders, 1866)

แมลงทับนางพญาสองสี

This genus has been revised by Dr. Sadahiro Ohmomo (2003). There are four species found from Thailand except the preceeding species. This species is purplish brown or green in fresh specimens, the elytral ivory patch small, slightly rounded and surrounded by dark blue shade.

Length 58-72 mm.

Distribution: N. Vietnam, N. Thailand (Mae Tha, Sansai, Wiang Pa Pao).

B46. *Megaloxantha gigantea* (Schaller, 1783)

แมลงทับนางพญายักษ์

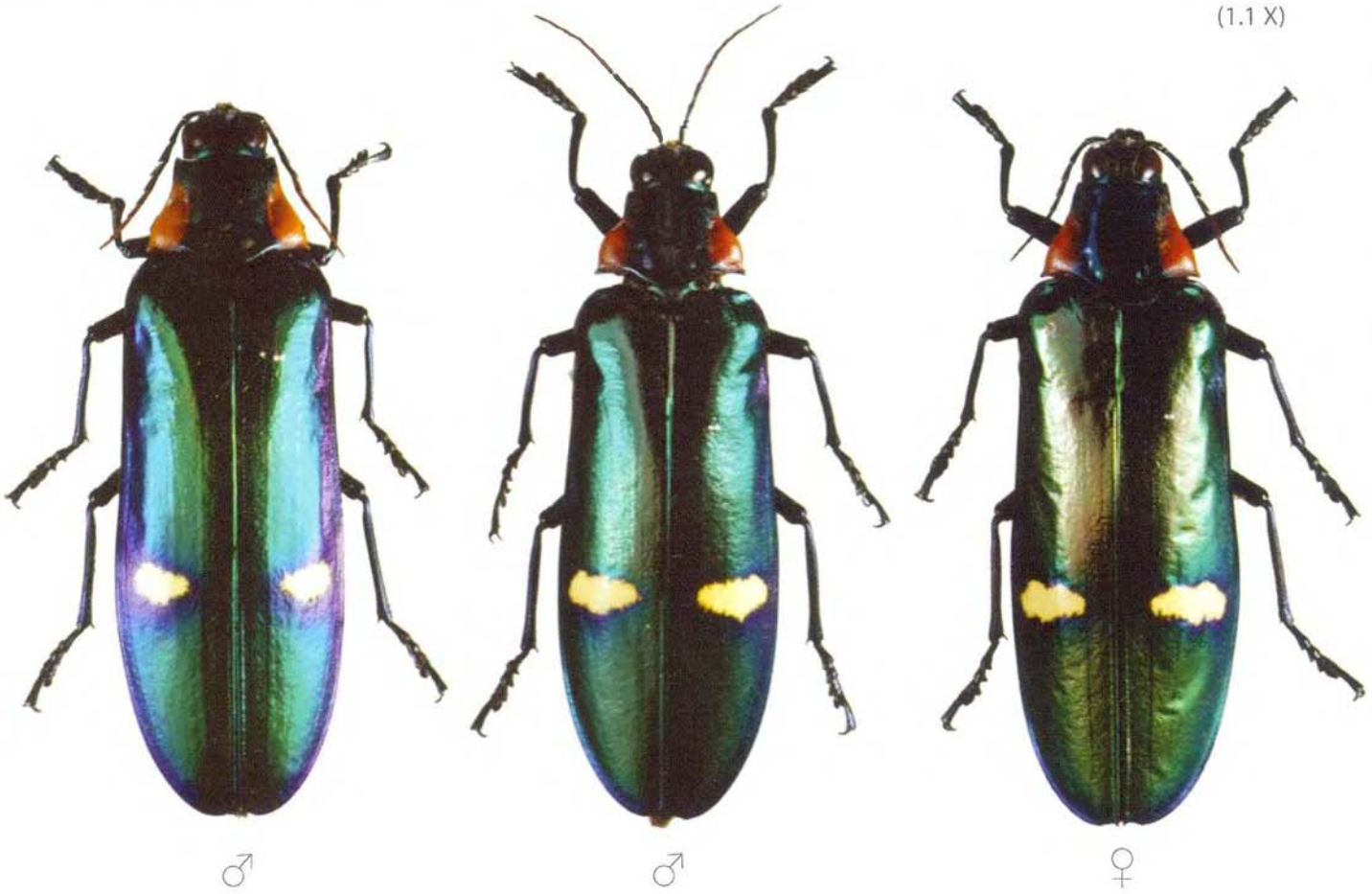
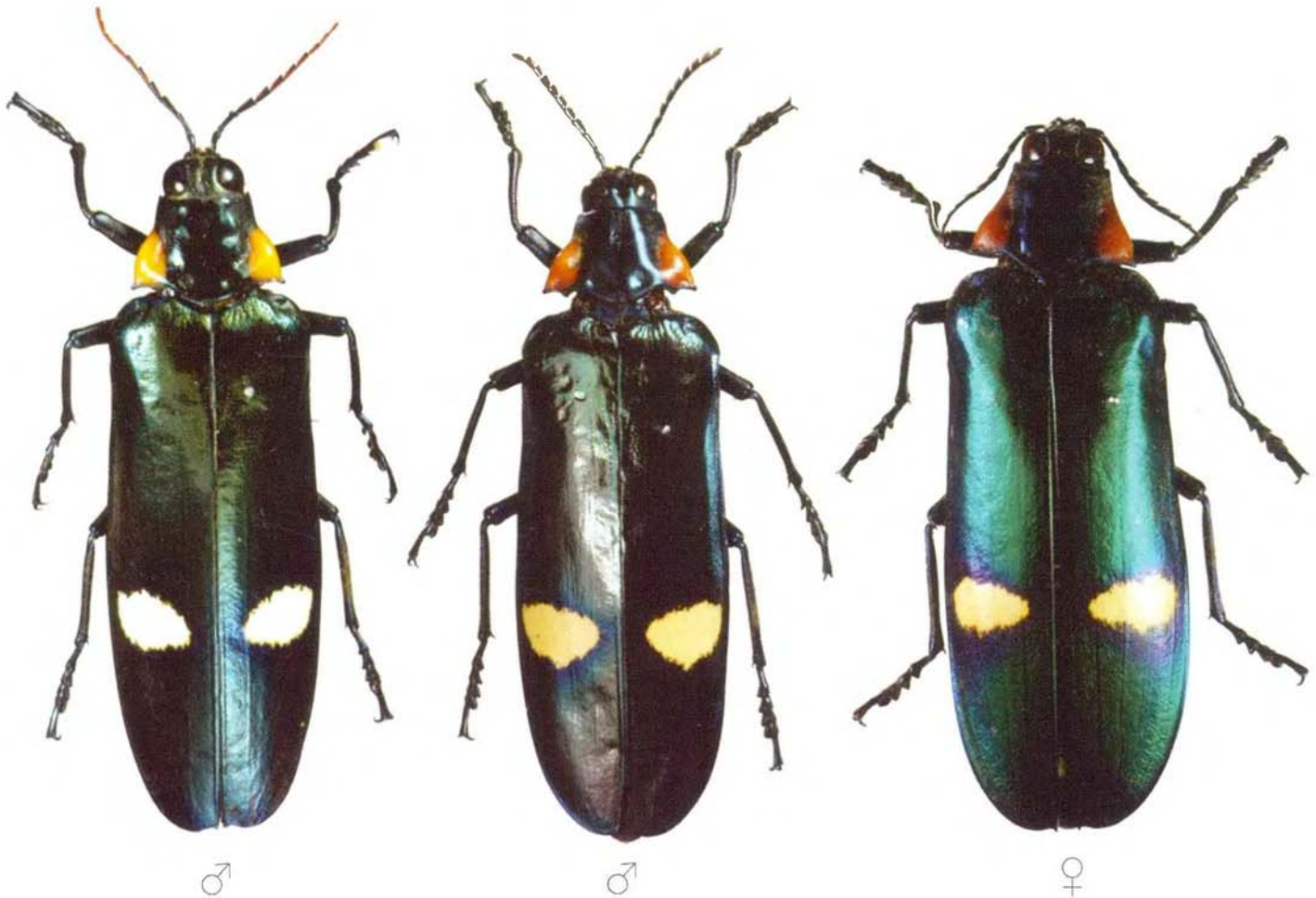
This subspecies, the triangular yellow spot at posterior angles of pronotum yellow, or brownish yellow, very convex at posterior and lateral margins; elytron with a large patch of an oval-shaped or rectangular-shaped.

Length 60-72 mm.

Distribution: N. Thailand (Mae Tha, Sansai, Wiang Pa Pao).

Host : *Xylia dolabriformis* (แดง), *Shorea robusta* (สาละ), *Butea monosperma* (ทองกวาว).

(1.1 X)

B45. *Megaloxantha brunnea*B46. *Megaloxantha gigantea*

B47. *Megaloxantha longiantennata* Ohmomo, 2003

แมลงทับนางพญาหนวดยาว

This species is very similar to *M. brunnea*, but differs by the followings: the elytra whitish patch small and transverse in the rare case without the patch while in the latter is also small; antennae long and 10th and 11th segments are longer beyond the posterior angle of pronotum in male whereas that of the latter only 11th segment is longer so in male.

Length 58-72 mm.

Distribution: Nepal, India, Myanmar, N. Thailand

(Mae Tha, Sansai, Wiang Pa Pao, Nong Ya Ploeng - Phetchaburi).

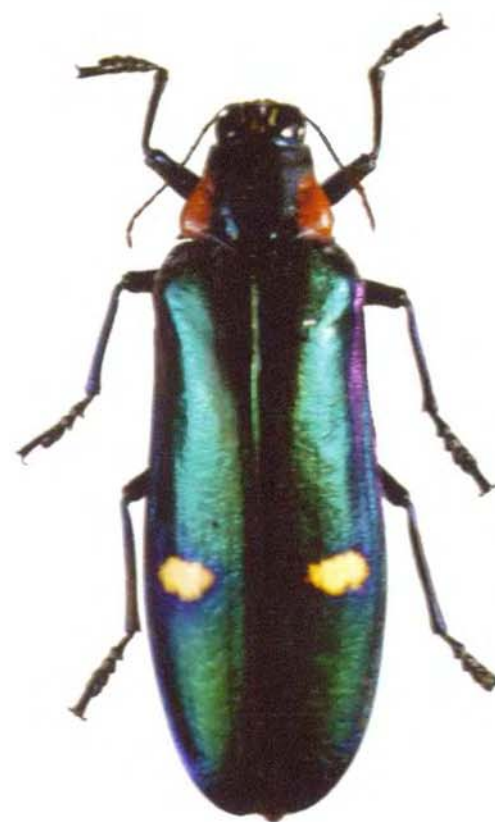
B48. *Megaloxantha mouhoti* (E. Saunders, 1869)

แมลงทับนางพญาไหล่เข้ม

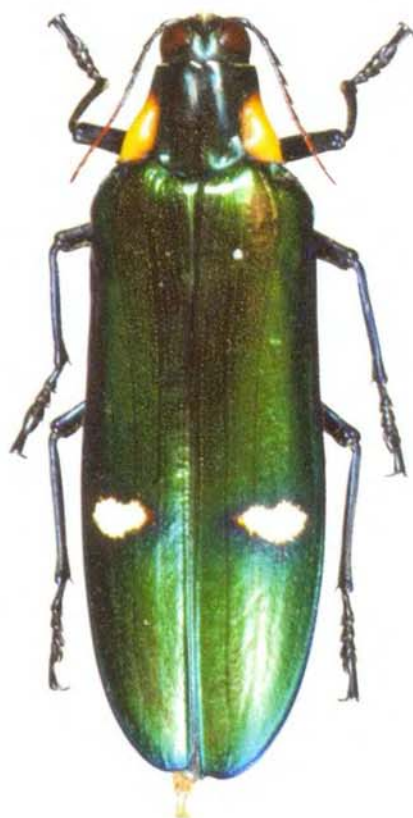
This species is very different to the former species in having the darker brownish-yellow triangular spot of the posterior angles of pronotum, but not so convex posterior margin and rather flat at lateral end; elytron with a yellow patch, rather large, usually broadest at the outer edge.

Length 60-72 mm.

Distribution: N. Thailand (Sansai, Wiang Pa Pao).



♂



♂

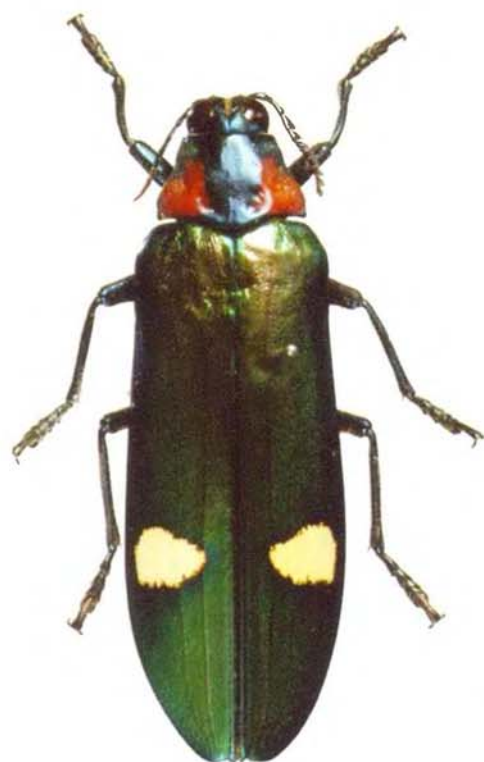


♂

(Paratype provided by
Dr. S. Ohmomo)

B47. *Megaloxantha longiantennata*

(after S. Ohmomo
from Petchaburi)



♀



♂



♀

B48. *Megaloxantha mouhoti*

Micropistus Théry, 1923

Head purplish-red, slightly depressed at frons, with a short deep groove at median and a short ridge at each side of it; pronotum coppery-red with green suffusion, broadest at base and gradually tapering in front, strongly punctured except a trace of smooth median stripe; abdominal sternum metallic green, with reddish reflection.

B49. ***Micropistus igneiceps*** (E. Saunders, 1872)

แมลงทับแห่งทองมน

Elytron weakly serrated at posterior margin, with about 10 or more small teeth, the last 2-3 teeth at apex of more or less the same sized, apices slightly separated at the end.

Length 28-35 mm.

Distribution: N. Thailand (Mae Tha - Lamphun).

B50. ***Micropistus microcephalus*** Théry, 1922

แมลงทับแห่งทองน้อย

Pronotum broad at base, elytron strongly serrated at posterior margin, with about 7-8 small teeth, the last one large, acute and pointed at apex.

Length 28-36 mm.

Distribution: N. Thailand (Doi Inthanon, Wiang Pa Pao).

Philocteanus Deyrolle, 1865

Frons with deep, short furrowed medially; eye small, widely separate.

B51. ***Philocteanus moricii*** Faimaire, 1878

แมลงทับประกายทอง

Head is golden-red, with a pair of strong depressions at front margin near the antennal insertions; pronotum reddish-yellow, strongly punctured; elytra green with reddish-yellow suffusion, with short irregular ridges near the base, usually with four weak costae, costae 2 and 3 jointing together before reaching the apex of each elytron; abdominal sternum metallic coppery red, with greenish reflection.

Length 18-26 mm.

Distribution: Thailand (Wang Chin, Mae Tha, Sansai).

B52. ***Chrysopistus savangvattana*** Baudon, 1963

แมลงทับแดงสว่างวัฒนา

Entirely metallic reddish, with prominent black spots on elytra. Head with a deep median groove, tinted with golden green at base between eyes; elytra with three pairs of lateral black spots at $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ from base and another pair of spots near the suture just behind the base. Elytral margins strongly serrated near apices.

Length 28 mm, 1 male, 6.iii.1998, Ranong, in coll. Bro. Amnuay Pinratana.

Distribution: Confined to S. Thailand (Ranong).



(2.0 X)



♂



♀

B49. *Micropistus igneiceps*

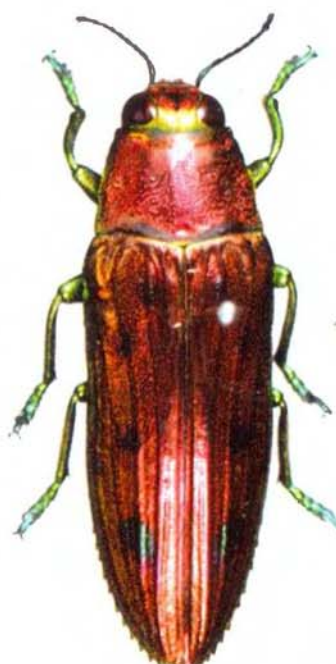
♀

B50. *Micropistus microcephalus*

♂



♀

B51. *Philocteanus moricii*

♂



♂ Δ

B52. *Chrysopistus savangvattana*

IV. SUBFAMILY BUPRESTINAE

There are 6 species illustrated in this book, but in Thailand, 14 genera 65 species are known (Ohmomo, 2007). Most of them are not so easy for identification especially the small ones.

Anthaxia Eschscholtz, 1829

B53. ***Anthaxia coomani*** Baudon, 1962

แมลงทับจิ๋วสีคราม

Small greenish blue, elongate, broad at front and slim behind. Pronotum is slightly wider than long, rounded at side, the front margin slightly excised near the angle, straight at base. Head, pronotum and elytra are strongly rugosely punctured, no grooves on elytra.

Length 4.4 mm.

Distribution: Thailand (Khon Kaen, Doi Mae Salong).

B54. ***Anthaxia rondoni*** Baudon, 1962

แมลงทับจิ๋วสี

Slightly longer than the preceding species, metallic greenish tinge with yellow, green, red and purple; pronotum square, slight excised at front margin and at base near the angles, marked with a dark green patch at both sides of median. Elytra broadly marked with violet at apices, along the suture to the middle, changing to red at the middle and with a broad green patch at the middle one-fifth from the base of each elytron.

Length 6.8 mm.

Distribution: Thailand (Rayong, Fang, Hua Hin).

Bellamyola Holynski, 1993

B55. ***Bellamyola mouhoti*** (E. Saunders, 1866)

แมลงทับขนานเขียว

Entirely metallic green, rather shining; head with a deep groove at median; eyes very closed together; pronotum broad at base than the front; elytra broadest near the base and gradually narrow for some distance and then abruptly narrow towards the end, lateral margin smooth without serrate teeth, the apical margin with double concave and three strong teeth at sides and the middle of each elytron; strongly grooved longitudinally, about 10 or more grooves.

Length 28-30 mm.

Distribution: India, Bhutan, Laos, Vietnam, Malaysia, Thailand (Mae Mo - Lampang).

Pseudhyperantha E.Saunders, 1869

B56. ***Pseudhyperantha pinratana*** Hattori, 1997

แมลงทับขนานเขียวปิ่นรัตน์

A beautiful orange yellow species, except head black between eyes, anterior margin of prothorax, base of prothorax, narrow black at elytral suture and broadly black at apices of elytra. The species name is nominated to Bro. Amnuay Pinratana. A Paratype female illustrated, 26.ii.1990, Ranong, in coll. Bro. Pinratana.

Length 26.5 mm.

Distribution: Confined to Peninsular Thailand (Ranong).

Belionota Eschscholtz, 1829

B57. ***Belionota ignicollis*** Nonfried, 1891

แมลงทับหัวแดงยักษ์

Medium sized, head and pronotum are crimson-red. Eyes are triangular and very closed together. Elytra are black, broad at base and rounded at apices. Abdominal sternum is black and tinted with metallic green especially at the tip. It is one of many beautiful jewel beetles from Thailand and it becomes a rare insect at present. Some specimens obtained from insect dealer in Chiang Mai some 20 years ago, but nobody has seen it again in the nature for many years until now.

Length 37-39 mm.

Distribution: N. Thailand (Wang Chin - Phrae).

Host : *Mangifera indica* (มะม่วง).

(1.8 X)



♀

(after Dr. S. Ohmomo)
B53. *Anthaxia coomani*



♂



♂△

B56. *Pseudhyperantha pinratanai*



♂

(after Dr. S. Ohmomo)
B54. *Anthaxia rondoni*



♀



♂

B55. *Bellamyola mouhoti*



♀



♀

B57. *Belionata ignicollis*

- B58. *Belionota prasina* Thunberg, 1789

แมลงทับไหล่แดง

Small, oblong shaped; head black, pronotum black, with a triangular red spot at the posterior angle of each side; elytra black, margins near the apex smooth and pointed at apices; abdominal sternum metallic green with coppery red reflection.

Length 20-29 mm.

Distribution: India, Java, Sumatra, Thailand (Chiang Dao).

Host : *Mangifara indica* (มะม่วง), *Pithecellobium dulce* (มะขามเทศ).

Chrysobothris Eschscholtz, 1829

- B59. *Chrysobothris superba* H. Deyrolle, 1864

แมลงทับป้อมสามสี

Small, oval-shaped, metallic green-blue; pronotum with a bright golden-red spot at posterior angle of each side; scutellum metallic green; elytra serrated at lateral margin extending from before the middle to apex of each elytron, deep metallic greenish-blue, with two short longitudinal of greenish depressions at basal half and near the angle, and two greenish depressed spots at middle and behind the middle of each elytron.

Length 18 mm.

Distribution: Sumatra, N. Thailand (Wiang Pa Pao).

Coomaniella Bourgoin, 1924

- B60. *Coomaniella purpurascens* Baudon, 1966

แมลงทับเล็กสีทองแดง

Dark reddish-purple, elongate, elytral subparallel-sided and slim at apex; eyes are large, and closed together at posterior end. Pronotum is broader than long. Elytra strongly punctured inside the grooves.

Length 6 mm.

Distribution: Thailand (Dr. S. Ohmomo provided me a male specimen from Phra Buddha Chai, Saraburi, 23.V.2007).

Karenaxia Bily, 1993

- B61. *Karenaxia similis* Bily, 1999

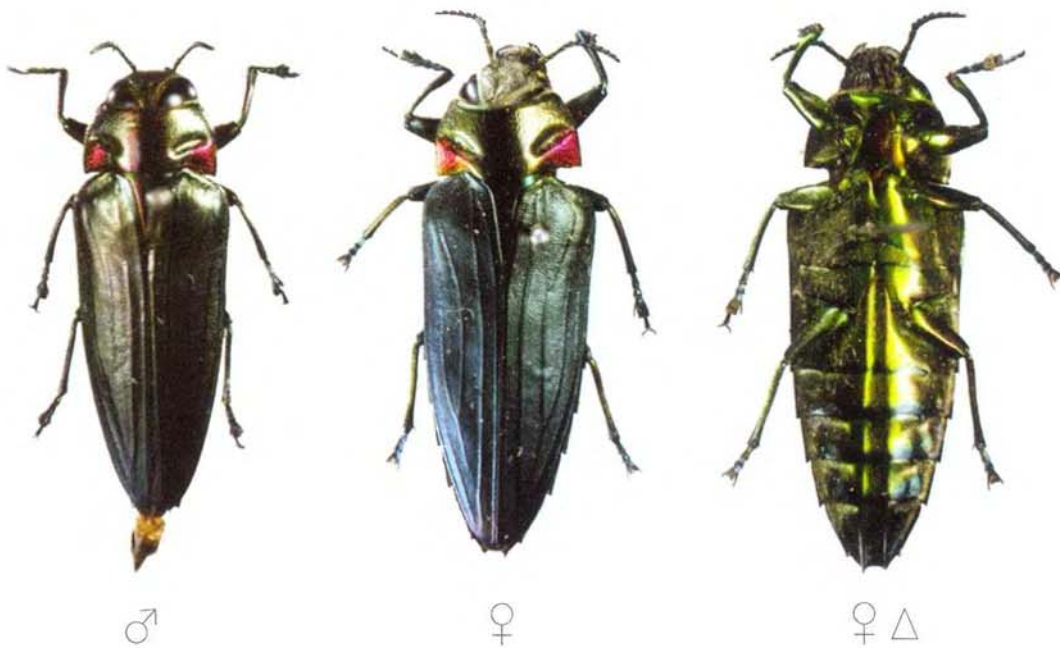
แมลงทับมอดไม้ดำ

Small, entirely black, body twice as long as broad; head rounded in front, with eyes far apart. Pronotum is rather short, rugosely punctured. Elytra strongly grooved longitudinally.

Length 5 mm.

Distribution: Thailand (Mt. Hin Lek Phai, Hua Hin, Dr. S. Ohmomo gave me a male specimen, 24.V.2003).

(2.0 X)

B58. *Belionota prasina*

(2.3 X)

B59. *Chrysobothris superba*

(6.6 X)

(after Dr. S. Ohmomo)
B60. *Coomaniella purpurascens*(after Dr. S. Ohmomo)
B61. *Karenaxia similis*

Lamprodila Motschulsky, 1860

(=**Ovalisia** Kerremans, 1900)

The body form is elongate, slim behind; shining green suffused with orange, with scattered blue spots above; elytra grooved longitudinally, moderately punctured inside the grooves.

B62. **Lamprodila magnifica** (Kerremans, 1892)

แมลงทับเขียวอมส้มทองประกาย

Body broadest at behind the shoulder, parallel sided and slim behind; elytra with a large spot behind the scutellum, a medium spot at the middle base of each elytron.

Length 11-14 mm.

Distribution: N. Thailand (Doi Pui, Wiang Pa Pao).

B63. **Lamprodila sarrauti** (Bourgoin, 1922)

แมลงทับเขียวอมส้มสายทอง

Body rather narrow and sim behind, differs from **O. magnifica** by narrower and slightly longer body, elytra without or with a very small basal spot at the middle base.

Length 14-17 mm.

Distribution: N. Thailand (Wiang Pa Pao, 1.vi.2008).

Philanthaxia H. Deyrolle, 1864

The body form is elongate; head broad with prominent eyes far separated; pronotum rather straght at sides, broadest at base; elytra subparallel sided and sharply slim towards apex at 4/5 from the base.

B64. **Philanthaxia aenea** (E. Saunders, 1867)

แมลงทับหัวโตสีดำ

Entirely black; pronotum much shorter than its width; elytra strongly grooped longitudinally, rugosely punctured between the grooves.

Length 9 mm.

Distribution: Thailand (Mt. Hin Lek Phai, Hau Hin 24.V.2003, Dr. S. Ohmomo leg.)

B65. **Philanthaxia purpuriceps** (E. Saunders, 1867)

แมลงทับหัวโตสามสี

Similar to the preceeding species, but golden green coloring with reddish tinged at sides of head, pronotum and elytra from humeral angles to apieces.

Length 9 mm.

Distribution: Thailand (Chiang Mai, Phetchaburi - Dr. S. Ohmomo provided me a male specimens from Nong Ya Ploeng, 5.V.2006)



♂

B62. *Lamprodila magnifica*

(4.8 X)



♂

B63. *Lamprodila sarrauti*

(5.0 X)



♂ △

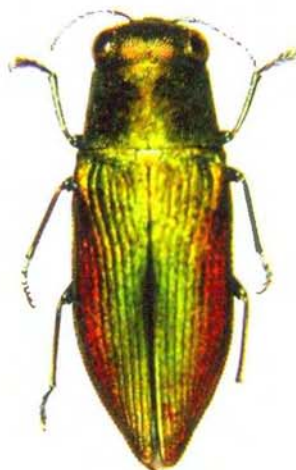
(3.2 X)



♂

B64. *Philanthaxia aenea*

(10.0 X)



♂

B65. *Philanthaxia purpuriceps*

♂

B66. *Coraebus wiwuti*

(6.7 X)



♂

B67. *Habroloma lateroalbum*

♂

B68. *Galbella violacea*

♂

(All photos in this plate, except B63, are adapted from Dr. S. Ohmomo)

V. SUBFAMILY AGRILINAE

In Thailand, 19 genera 180 species are recorded and many of them are awaiting for identification. Most of them are small sized species and micro-sized species.

Coraebus Gory & Laporte, 1839

B66. ***Coraebus wiwuti*** Ohmomo, 2004

แมลงทับอกกว้างวิวัฒน์

Body small, rather robust; above with uniformly brilliant blue, sometimes with feeble violet tinge. Pronotum is narrow in front, broadest at near the base and slightly broader than the elytra. Elytra are ornamented with an oblique-transverse band of pale white hairs at 2/3 from the base of each elytron, body ventrally, antennae and legs are shining black. Holotype: male, NSMT, 10-13.V.1990, Doi Suthep, M. Itoh leg. This species name is dedicated to Dr. Wiwut Daengsubha, who supported Dr. Ohmomo for his trip in Thailand.

Length 6.8-7.2 mm, Holotype: 6.8 mm in length and 2.4 mm in width.

Distribution: N. and N.E. Thailand (Doi Suthep, Phu Rua – Loei, Dr. S. Ohmomo provided me a paratype male, Doi Sang, Chiang Mai, 13.V.1990).

Habroloma J.Thomson, 1864

B67. ***Habroloma lateroalbum*** Ohmomo, 2004

แมลงทับสามเหลี่ยมข้างขาว

Body planate, subtriangular, above dark reddish brown and a distinct aeneous tinge; elytra ornamented with longitudinal bands of whitish hairs along lateral margins and transverse bands near apices; body ventrally and antennae with a distinct aeneous tinge. Holotype: male, NSMT, 7.XI.1982, Chaing Dao, A. Nishiyama leg.

Length 2.65 - 2.80 mm, Holotype: 2.70 mm in length and 1.85 mm in width.

Distribution: N. and N.E. Thailand (Chiang Mai, Phrae, Ubon Rachathani, Khon Khaen).

VI. SUBFAMILY GALBELLINAE

This subfamily represented by only one genus ***Galbella***. Only one species is known from Thailand and distribute to Indo-china.

Galbella Westwood, 1848

B68. ***Galbella violacea*** Westwood, 1848

แมลงทับกลมจืด

The body shape oval shaped, rather slim at both ends, similar to ***Paratrachys*** but a little bit longer, brilliant blue, strong convex above, finely punctured, but shining. Head is small.

Length 3-5 mm.

Distribution: Thailand (Dr. S. Ohmomo provided me a male specimen, Khoa Bandai It, Phetchaburi, 19.V.2004).

FAMILY MELOIDAE

301

Beetles of Thailand



The members of this family are commonly known as blister beetles or oil beetles. The adults are narrow and elongate. Head is broad in front and suddenly constricted behind the eyes, forming a narrow neck. Antennae are variable either clavate in *Mylabris*, serrate in *Cissites* or monoliform in *Eletica*. Elytra are rather long, sub-parallel-sided, soft and flexible. Most blister beetles can extract body fluid from the joints of the legs, which contain cantharidin. The extracted amount is different among the species. This cantharidin is of medical importance. It can cause blister on the human skin when contact these beetles.

Many species of blister beetles are pests of economic crops and some kinds of weeds, such as *Epicauta waterhousei* found feeding on leaves and flowers of *Amaranthus spinosus*. They usually feed on leaves and flowers of legumes (beans and peas), cotton, tomato and eggplants, etc. Beetles could be harmful to human who eat them as diet food or by miss-understanding to use as sex stimulant.

The larvae undergo hyper-metamorphosis, which is a type of complete metamorphosis, but the larval stages being more than one types. The first instar larva is an active type, campodeiform. The subsequent instar larva is scarabaeiform. The first instar sometimes calls triangulin. There are three pairs of long legs, which enable insect to walk rapidly to seek out the foods. Their foods are mainly eggs of soil insects especially those of grasshoppers. We considered them as beneficial insects. However, sometimes particularly of some species prefer feeding on bee eggs. In this case they can be the enemies of bees as well.

The world species of Meloidae are about 1,500 species. Thailand species could be more than 20 species. However, very little study has been done on these beetles. Some of known species I have included in this book just as the guidance to this beetle family.

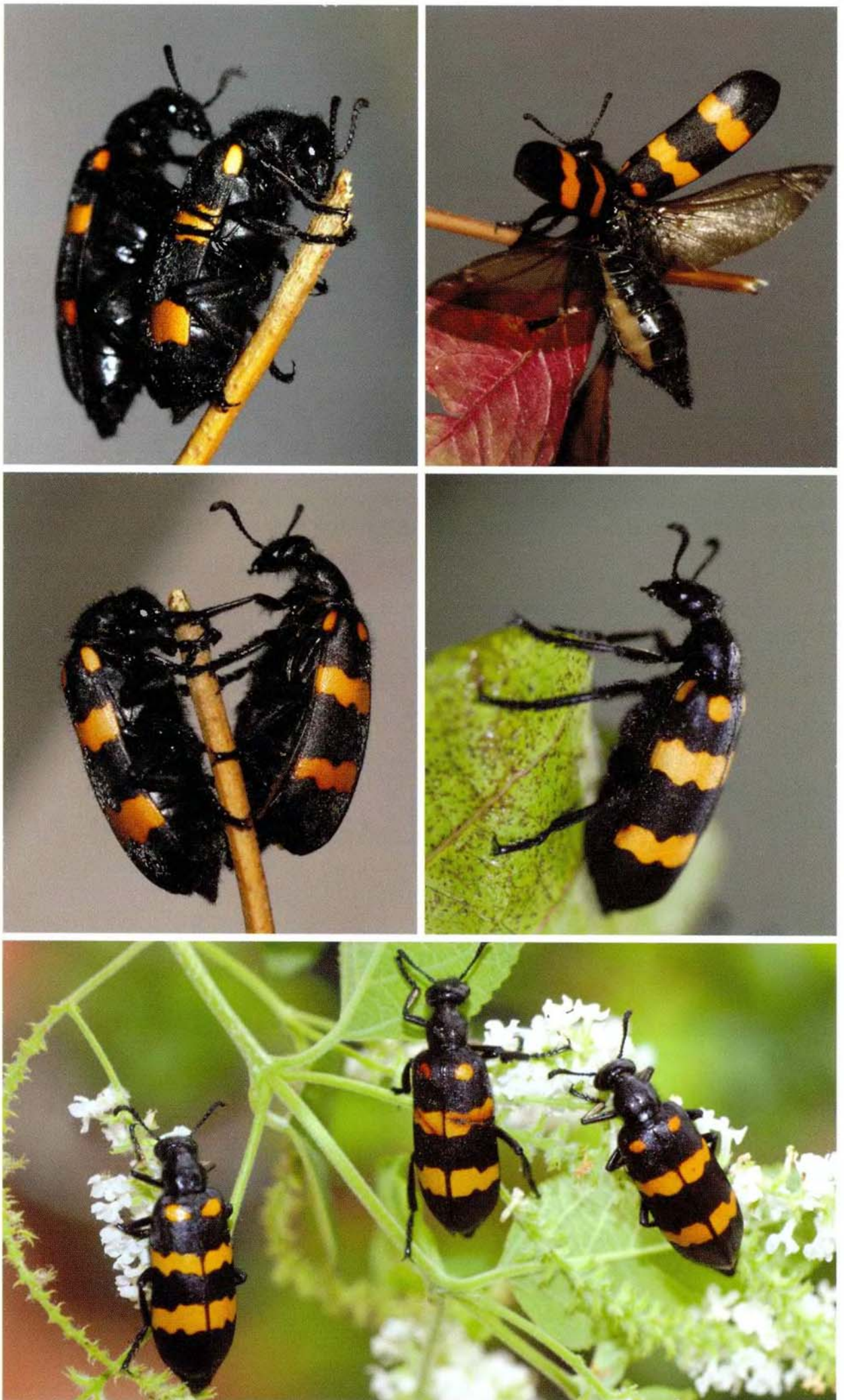


Figure 44. The large black and yellow blister beetle, *Mylabris phalerata*



Figure 45. The white striped blister beetles, *Epicauta waterhousei* in cooperating on *Amaranthus spinosus* which is a food for the adults (Wiang Pa Pao).



Figure 46. The red blister beetles, *Eletica castanea*, in copulating (Wiang Pa Pao).

M1. *Cissites maxillosa* Fabricius, 1801

ด้วงน้ำมันแดงหัวโต

Male, head, pronotum, scutellum and elytra are reddish-brown, other parts black, very smooth and shining. Head is broader than long and slightly broader than pronotum, antennae shorter than half of the body length, flattened and serrated; mandibles long and strongly curved horizontally inwards; eyes small black and widely separated. Pronotum is broad and convex above, abruptly narrow somewhat behind the eyes. Elytra have four weak costae, the 1st and 2nd jointing together about the middle and running towards the apex of each elytron. Legs are black, fringed with fine black hairs.

Length 22 mm.

Distribution: Thailand (Kamphaeng Saen, Bangkok).

M2. *Eletica castanea* Thomas, 1893

ด้วงน้ำมันแดงยาว

A reddish-brown species, head is much narrower than pronotum, the base of head very narrow as a narrow neck; eyes large black, rather prominent, wide separated, the distance between the eyes more than the diameter of an eye. Antennae are moniliform type. Pronotum is as long as broad, rather rounded at front angles, elevated posteriorly near the base, very fine punctured and shining. Elytra are broad and long, parallel-sided, with three to four weak costae, the 1st and 2nd jointing before the apex of each elytron.

Male, hind femora are enlarged. **Female** is similar to the male in color and size, but hind femora is normal.

Length 28-36 mm.

Distribution: Myanmar, Malaysia, Thailand (Phetchabun, Chon Buri, Lampang, Doi Phu Kha).

(1.6 X)



♂



♂

M1. *Cissites maxillosa*

♂



♂



♀



♂



♂ △

M2. *Eletica castanea*

M3. ***Epicauta hirticornis*** Haag-Rutenberg

ด้วงน้ำมันหลังดำ

Entirely black, including antennae, legs, except the head is red. Elytra are dull black, with pubescence yellowish or whitish along the suture and apical margin of each elytron and at apical end of abdominal segments.

Length 18-20 mm.

Distribution: N. Thailand (Wiang Pa Pao, Fang).

Host : Soybean, groundnut, eggplants.

M4. ***Epicauta maklini*** Haag-Rutenberg

ด้วงน้ำมันเหลืองปลายดำ

Head is brownish-red. Pronotum is black. Elytra are brownish, dull black at base and at apical margin, with a narrow yellow longitudinal stripe in the middle, extending from the humeral angle to meet the apical black margin of each elytron, the suture with pubescence yellowish.

Length 15-18 mm.

Distribution: Throughout Thailand.

Host : Soybean, mung-bean, groundnut.

M5. ***Epicauta waterhousei*** Haag-Rutenberg

ด้วงน้ำมันดำแถบขาว

Head is red, other parts are dull black. Elytra bear a broad longitudinal stripe of pubescence yellowish, extending from the humeral angle towards apex of each elytron and with pubescence yellowish, narrowly along the suture, apical and lateral margins.

Length 18-20 mm.

Distribution: Throughout Thailand (Wiang Pa Pao, Khao Yai).

Host : Groundnut, soybean, eggplants, tomato, ***Amaranthus*** spp.



♀

M3. *Epicauta hirticornis*

♂



♀



♂

M4. *Epicauta maklini*

♂



♂



♂ △

M5. *Epicauta waterhousei*

M6. *Mylabris cichorii* Linnaeus, 1764

ด้วงน้ำมันเหลืองดำเล็ก ด้วงน้ำมันเสือเหลือง

Some common names known are Telini fly and Chinese blister beetle. It is small to medium size, black and yellow colored. Head and pronotum are dull black. Elytra are black, with two broad yellow transverse bands at anterior half and posterior half, a narrow yellow band near the base not reaching the suture or the lateral margins.

Length 11-17 mm.

Distribution: Mediterranean to China and Thailand (Kanchanaburi, Chiang Rai).

Host : Adults usually found feeding on pollens of many kinds of flowers.

M7. *Mylabris phalerata* Pallas, 1781

ด้วงน้ำมันเหลืองดำใหญ่ ด้วงไฟเดือนห้า

Large size, black and yellow species, it is very similar to the former species in colors, but easy recognized by its larger sizes. The narrow yellow band near the base usually separated into two spots while those of the former interrupted by a narrow black sutural stripe.

Length 25-34 mm.

Distribution: Throughout Thailand.

Host : Soybean, mung-bean, groundnut, cucurbits.

(1.7 X)



♂



♂



♂

M6. *Mylabris cichorii*

(1.4 X)



♂



♂



♂



♂



♂ Δ

M7. *Mylabris phalerata*

FAMILY DISTENIIDAE

FAMILY CERAMBYCIDAE

Owing to their long and slender antennae the members of this family are generally called longicorn beetles or long-horned beetles. Identifying characteristics for the family Cerambycidae include: long filiform antennae, ranging from one-half to over two times the length of the body; body usually elongate and cylindrical, 2- to 60-mm in length; eyes generally notched with antenna arising within the notch.

It is a big family with 21,000 world species and according to Gressitt & Rondon, 1970 more than 1,156 species and subspecies have been recorded from Laos, Thailand and adjacent. I have more than 200 species in my own collection and many of them are still unidentified. Most of Cerambycidae are wood-borers in the larval stage and considered as the most dangerous beetles of trees. A newly-hatched first-instar larva of *Batocera* is about 10 mm length. The fully-grown larva may reach 100 mm length. The grub is subcylindrical, weakly flattened dorso-ventrally, yellowish-white, with the head dark brown and sclerotized, normally without obvious legs. The larvae feed upon solid tissue of living, dead or dying plant or less commonly on decaying wood. Many of long-horned beetles, *Batocera*, *Hoplocerambyx spinicornis* and *Diastocera wallichii*, for examples, are polyphagous species, which attack both living and dead trees. They generally are attracted by new felled mango trees. The beetles found aggregating for mating and egg-laying shortly especially at the first 1-2 days of fallen. They prefer the shade of the outside bark nearest to the ground. Adults are generally nocturnal, feeding at night by gnawing the bark of twigs or the softer growing tips of shoots. They are comparatively long-lived, living for about 4 months or longer.

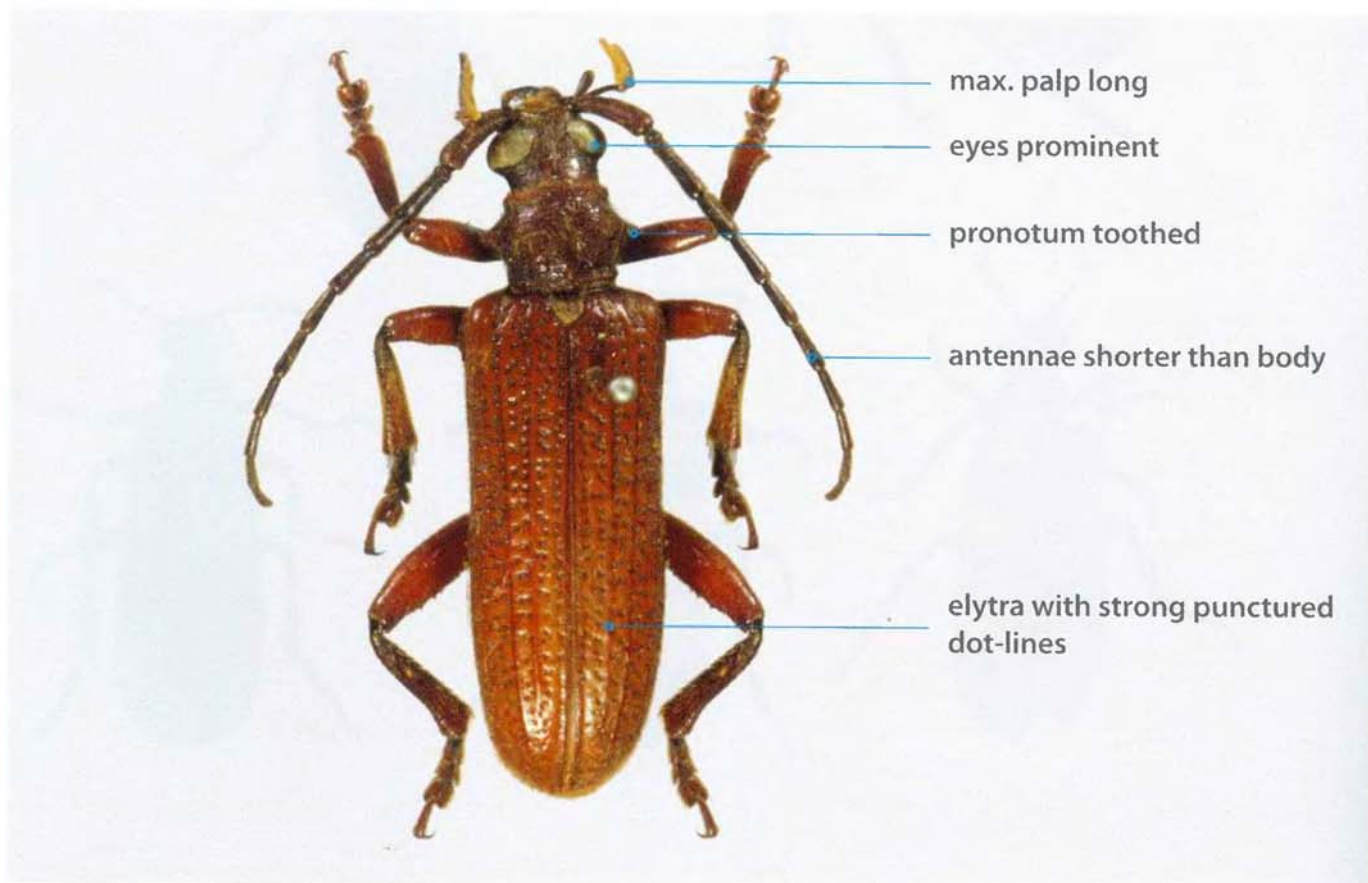


Figure 47. Long maxillary palphorned beetle, *Cyrtanops punctipennis*, female. Dorsal view.



Although they are not diurnal, hiding by day in crevices or holes on tree trunks and larger branches or close to the ground, but many species are usually seen sitting in the sunshine especially the colored ones. There are some common Thai names applied relating to their habits, such as "malaeng mae daed" or sun lover species, *Dorysthenes buqueti*. While the rain lover species or "malaeng mae phon" is the black, big jaws, *Dorysthenes walkeri*. I used to observe this beetle prefer flying and walking in the rain. Another nice yellow and black common species, *Pachhteria dimidiata* which is active flying during the hot sunshine around phikhun trees, *Mimusops elengi* to feed on flowers.

All *Batocera* spp., *Apriona germari* and some other species possess stridulating organ on pro- and mesothorax. They usually produce warning loud sounds when we catch them.



Figure 48. Long-horned beetle, *Megopis maculosa*, male.

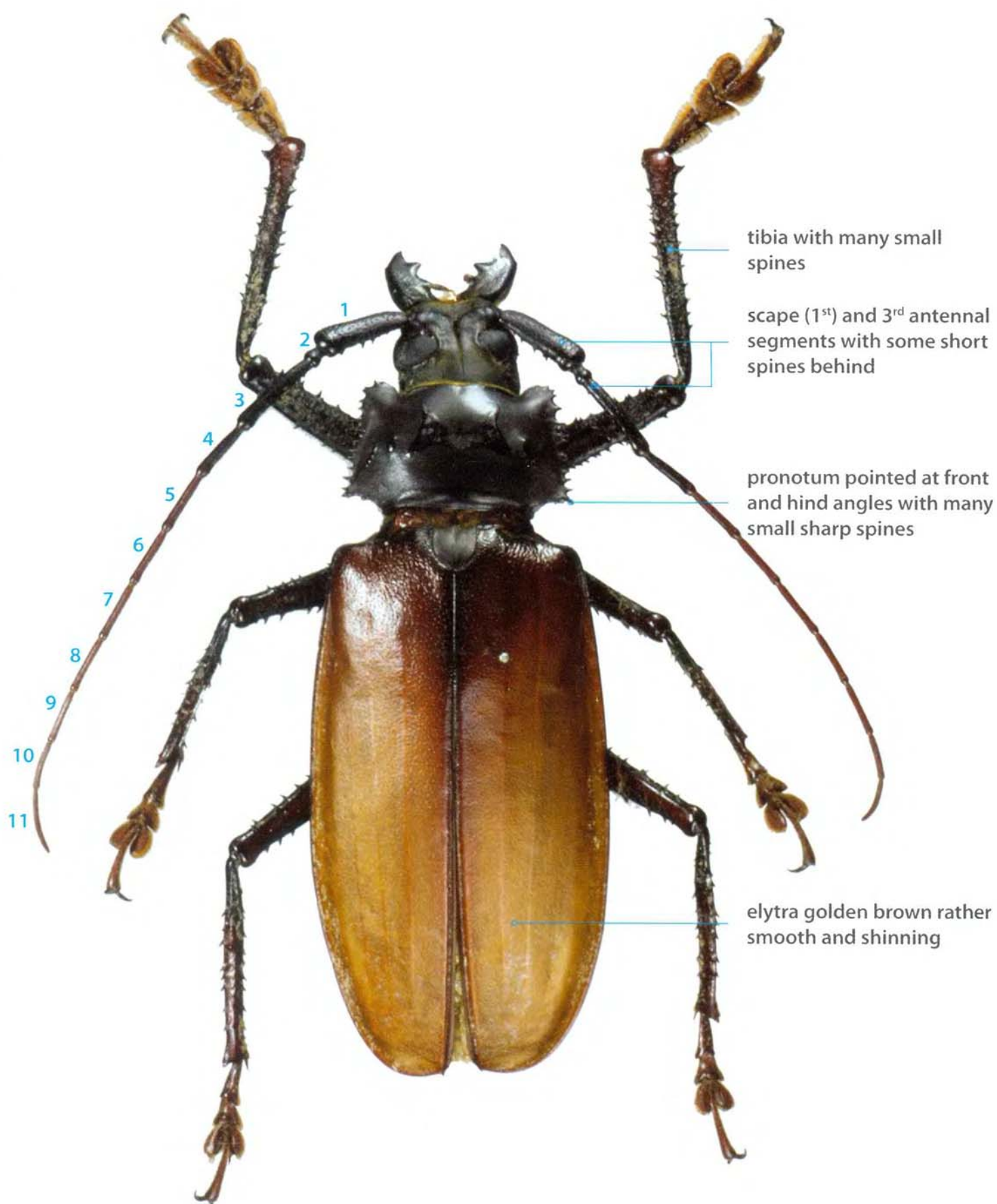
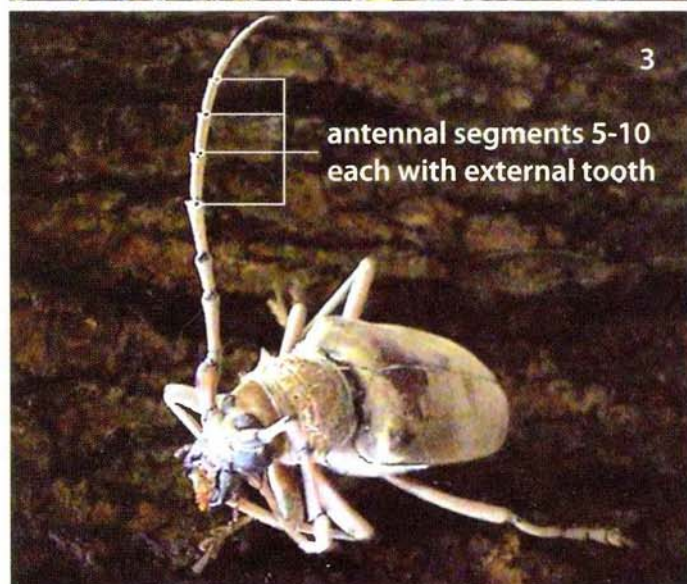


Figure 49. The largest spiny-leg long-horned beetle in Thailand, *Rhaphipodus hopei*, male. Dorsal view.



4



Figure 50. Ceiba long-horned beetle, *Plocaederus obesus*, 1-2. egg-shell of pupal cocoon, 3. male, 4. female, 5. *Ceiba pentandra* tree damaged by this beetles and other long-horns.

FAMILY DISTENIIDAE

This family is closely related to the Family Cerambycidae, which some authors included in the same family. Mandibles scalpriform (arched and scoop-like), maxillary palp sometimes very long and with segment 4 bilobed whereas the mandibles in Cerambycidae is normal and the maxillary palp is not very long.

Cyrtonops White, 1853

A single species of the genus and it is the only one species presented in this book.

A1. **Cyrtonops punctipennis** White, 1853

ด้วงหนวดยาวเสริม

Body is entirely reddish-brown, antennae shorter than body, maxillary palp very long, with segment four bilobed; eyes very prominent; pronotum toothed at sides; elytra with strong punctured dot-lines.

Length 18-28 mm.

Distribution: India, Myanmar, Sumatra, Laos, Thailand (Phu Khieo).

FAMILY CERAMBYCIDAE

SUBFAMILY PRIONINAE

Tarsi with segment 3 dilated and 4 minute, often hidden; prothorax with complete lateral margin; mesonotum without striated area; wing with a closed cell in anal sector.

Lateral margin of prothorax with many small teeth, scape long.

Macrotoma Serville, 1832

Antennal segments 3 longer than 1, segment 1 of the fore tarsi much longer than 2.

A2. **Macrotoma crenata** (Fabricius)

ด้วงหนวดยาวอกหนามดำ

This species, dark reddish-brown, pronotum with distinctly raised basal or sublateral areas on disc and densely punctured; antennal segment 3 twice as long as 1, antennal scape one third longer than its width.

Length 23-47 mm.

Distribution: India, Sri Lanka, Myanmar, Laos, Thailand.

Host : *Mangifera* (มะม่วง), *Quercus* (ก่อ), *Ficus* (ยางอินเดีย).



(3.0 X)



♀



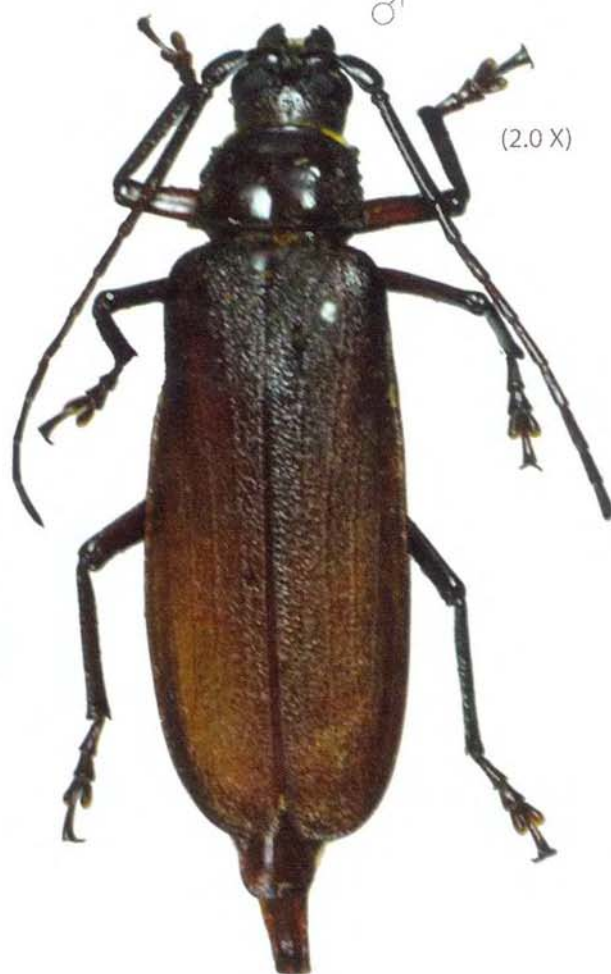
♀ △



♂

A1. *Cyrtonops punctipennis*

♂



(2.0 X)

♀

A2. *Macrotoma crenata*

A3. *Macrotoma fisheri* Waterhouse, 1884

ด้วงหนวดยาวอกหนามตาล

Reddish brown; pronotum without distinctly raised basal or sublateral areas on disc, less punctured in the middle of the disc; antennal segment 3 less than twice as long as segment 1, antennal segment 3 sparsely punctured.

Length 30-68 mm.

Distribution: Myanmar, S. China, Vietnam, Laos, N. Thailand.

Host : *Catanea* (เกาลัดจีน), *Diospyros* (ตะโก มะเกลือ), *Quercus* (ก่อ), *Prunus* (อบเชย ท้อ).

Rhaphipodus Serville, 1832

Antennal segment 3 not longer than 1; the fore tarsal segment 1 hardly longer than 2; fore tibiae usually bearing spines.

A4. *Rhaphipodus fetalis* Lameera, 1912

ด้วงหนวดยาวขาหนามใหญ่

Dark reddish-brown; scape and 3rd antennal segments without short spines; pronotum pointed at front angles, with many small sharp spines throughout at sides and rather flat above; elytra golden brown and rather smooth and shining.

Length 49-60 mm.

Distribution: N. Vietnam, Laos, Thailand (Khao Yai).



(1.1 X)



♂



♂ Δ



♀

A3. *Macrotoma fisheri*

(1.1 X)



♂



♀

A4. *Rhapipodus fetalis*

A5. *Rhaphipodus fruhstorferi* Lameere, 1903

ด้วงหนวดยาวขาหนามดำ

A medium dark brown to nearly black longhorn; pronotum not pointed at the front angles, with small many spines and the large one at the behind angle, rather convex above; scape and 3rd antennal segments without short spines, fore tarsal segment 1 scarcely longer than 2.

Length 35-45 mm.

Distribution: N. Vietnam, Laos, Thailand (Doi Pha Hom Pok).

A6. *Rhaphipodus hopei* (Waterhouse, 1836)

ด้วงหนวดยาวขาหนามฝ้า

It is one of the largest longhorn in Thailand, head and antennae dark reddish-brown to nearly black while elytra golden brown rather smooth and shining; pronotum pointed at front and hind angles with many small sharp spines; scape and 3rd antennal segments with some short spines behind; fore tarsal segment 1 much longer than 2.

Length 65-90 mm.

Distribution: Andaman Is., Myanmar, Malaysia, Borneo, Laos, Thailand (Doi Pha Hom Pok, Chiang Dao).

Host : *Dipterocarpus obtusifolius* (เหียง), *Dipterocarpus alatus* (ยางนา).



(1.3 X)



♀

A5. *Rhaphipodus fruhstorferi*

(1.0 X)



♂



♀



♂

A6. *Rhaphipodus hopei*

Tribe Eurypodini

Lateral margin of prothorax entire, even or flattened.

Eurypoda Saunders, 1853

Body rather flat, dark reddish-brown to nearly black; head long, as long as its width or longer, strongly punctured above, mandibles long, pointed forwardly in front; pronotum broader than long; elytra long, sub-parallel-sided, rounded at apices.

A7. *Eurypoda batesi* Gahan, 1894

ด้วงหนวดยาวหลังแบนแผ่น

Reddish brown species; head is not very long slightly shorter than wide; pronotum pointed at front angles and obtuse behind the middle, only one single smooth and shining area above.

Length 21-38 mm.

Distribution: Sumatra, Malaysia, China, Laos, Thailand (Doi Pha Hom Pok).

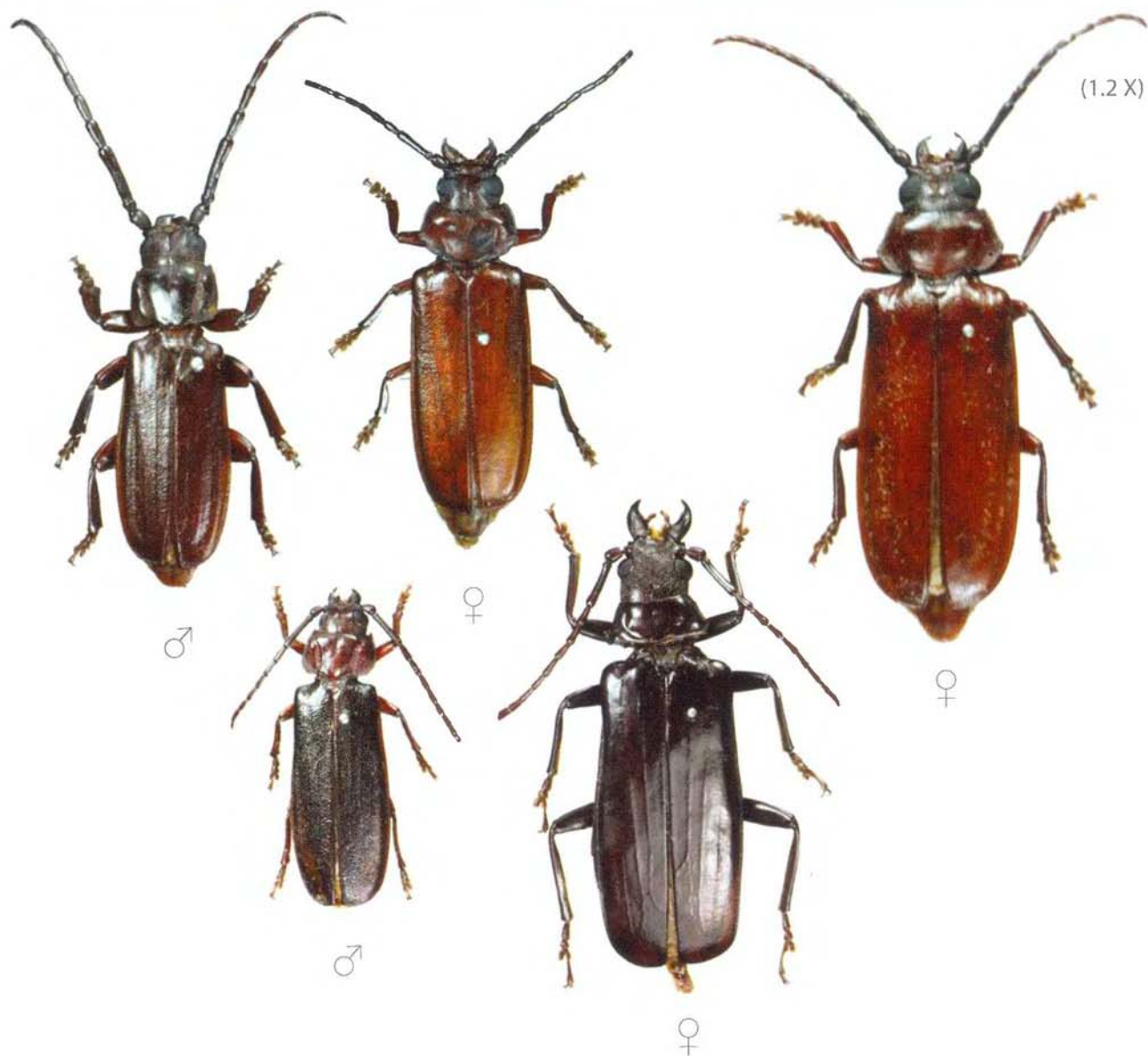
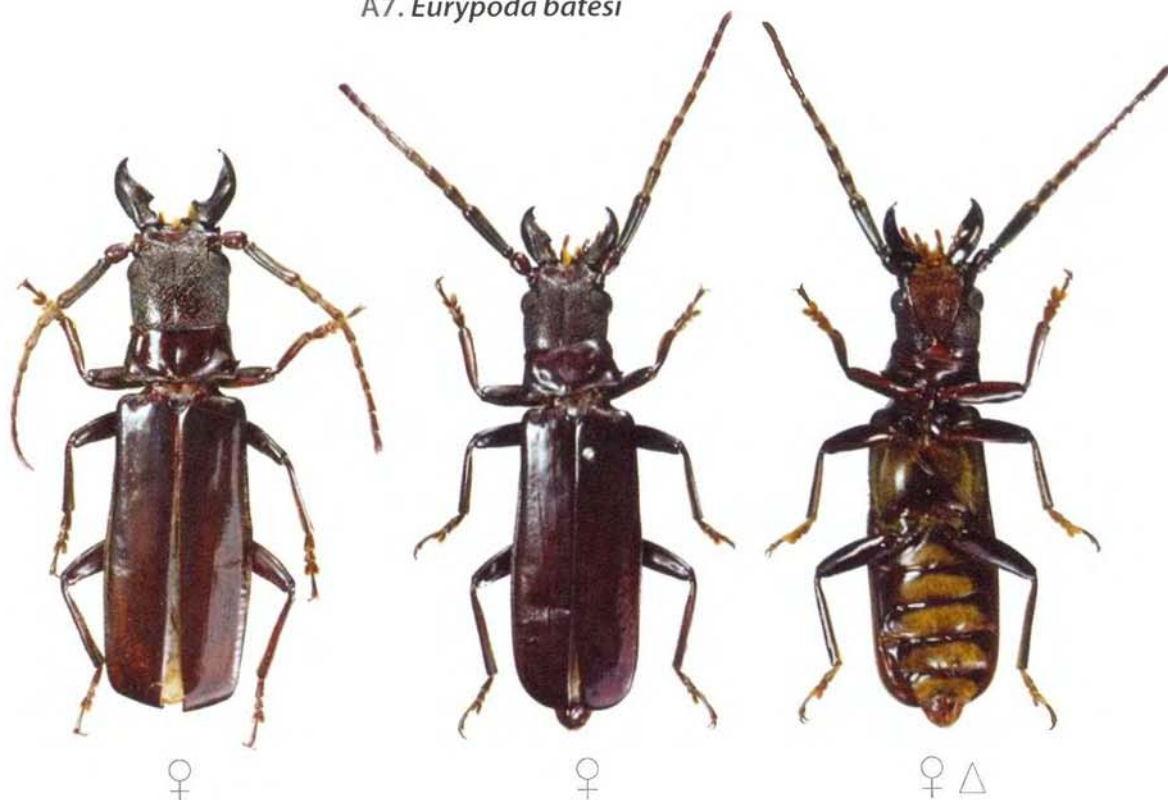
A8. *Eurypoda nigrita* Thomson, 1865

ด้วงหนวดยาวหลังแบนร่อง

Head broad and long, strongly punctured; pronotum broadest at base, with a median groove and two oblique grooves at both sides near the base divided the surface into three areas, two small areas at the posterior corners and the other large area in the middle; elytra rather narrow and long, rounded at apices.

Length 21-45 mm.

Distribution: Sumatra, Malaysia, China, Laos, Thailand (Wiang Pa Pao, Doi Pha Hom Pok).

A7. *Eurypoda batesi*A8. *Eurypoda nigrita*

Megopis Serville, 1832

Head rather small and narrow usually with a longitudinal groove at median line; antennae cylindrical, the segment 3 very long, several times as long as scape; pronotum generally untoothed laterally at the middle.

A9. **Megopis costipenne** (Gahan, 1906)

ด้วงหนวดยาวกลมหนามเดี่ยว

This is a ferruginous red species. Elytra each with four costae, the outer one reaching the apex, whilst a second nearly does so, the remaining two being short; apex subtruncate near suture, armed with short spine at the suture. Prothorax bears only a sharp angle process at the base of each side of pronotum.

Male, antennae a little longer than body. **Female**, antennae slightly shorter than body.

Gahan, Fauna India Col. 1:49, reported a doubtful species wrongly referring to the next species.

Length 26-40mm.

Distribution: Assam, N. Thailand (Wiang Pa Pao).

Host : *Tectona grandis*, teak (สัก).

A10. **Megopis costipennis** White, 1853

ด้วงหนวดยาวกลมหนามคู่

Gressitt & Rondon, 1970 described in their key to the species of **Megopis**: Prothorax with basal and apical angles dentiform processes. This species is golden brown, elytra uniform colored with three raised costae of each elytron; scape without a spine near the apex.

Length 30-40 mm.

Distribution: India, Laos, Thailand (Wiang Pa Pao, Doi Pha Hom Pok).



(1.3 X)

A9. *Megiopsis costipenne*

(1.5 X)



A10. *Megiopsis costipennis*

A11. *Megopis maculosa* (Thomson, 1857)

ด้วงหนวดยาวกลมหนามลาย

Black with pubescence gray covered head, pronotum and elytra; pronotum with basal and apical dentriform process; elytra strongly marginated and with two strong raised costae of each elytron, with two dark brown bands from the outer margin obliquely downwards to the inner costa at before and after the middle of each elytron; antennal scape with a strong spine close to the top apex.

Length 36-60 mm.

Distribution: N. India, Laos, Thailand (Khao Yai).

A12. *Megopis marginalis* (Fabricius, 1775)

ด้วงหนวดยาวกลมด้านขน

Reddish-brown; head is rounded and a little bit long; pronotum swollen at the middle sides, without toothed; elytra with three or four weak costae; antennae rough, granulated and fringed with fine hairs beneath in male.

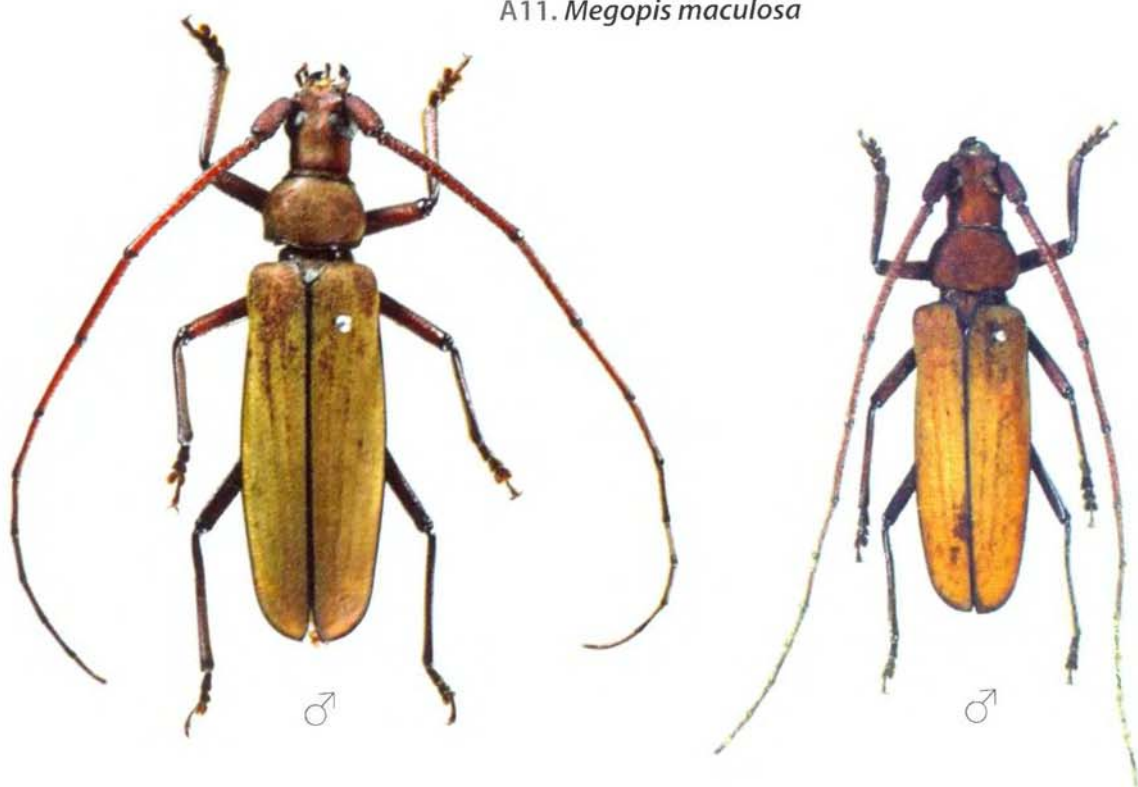
Length 22-40 mm.

Distribution: Sunda Is., Celebes, Moluccas, Malaysia, Taiwan, Hainan, China, Laos, N. Thailand (Chiang Dao).

(1.3 X)



A11. *Megopis maculosa*



A12. *Megopis marginalis*

A13. *Megopis procera* Pascoe, 1866

ด้วงหนวดยาวกลมตาลแดง

Dark reddish-brown; head small, eyes dark brown and rather prominent; pronotum nearly square, sub-parallel-sided, slightly broader behind than in the front; elytra with three to four strong raised costae of each elytron.

Length 25-34 mm.

Distribution: Kalimantan, Malaysia, Laos, N. Thailand (Wiang Pa Pao).

A14. *Megopis sinica* (White, 1853)

ด้วงหนวดยาวกลมสองสัน

Pale brown, eyes are rather prominent; pronotum without spine at the corners, the base much broader the front margin; elytra strongly marginated, suture dark brown and strongly raised, with two longitudinal raised costae of the same color as the suture and the margins, both jointing just before the apex of each elytron; antennal segment in male plain without a fringed of hairs. Subspecies *ornaticollis* is darker brown, elytra with two weaker costae.

Length 32-42 mm.

Host : *Salix* (สนุ่น), *Morus* (หม่อน).

A14a. *Megopis sinica sinica* (White, 1853)

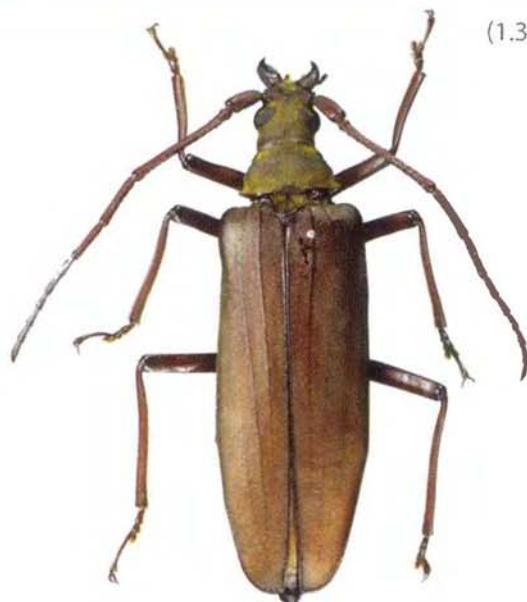
Distribution: Myanmar, China, Taiwan, Korea, Japan, Laos, Cambodia, Vietnam, Thailand (Chiang Dao).

A14b. *Megopis sinica ornaticollis* (White)

Distribution: N. India, Myanmar, S. China, Taiwan, Laos, Thailand (Doi Pha Hom Pok).



♂

A13. *Megopis procera*

(1.3 X)

♀



♂



♀



♀

A14a. *Megopis sinica sinica*

♂



♀

A14b. *Megopis sinica ornaticollis*

Tribe Prionini

Prothorax with lateral margin bearing generally 3 large and flattened teeth.

Dorysthenes Vigors, 1826

Pronotum with 2-3 large flattened teeth at lateral margin of each side; antennal segments without fine longitudinal grooves.

A15. ***Dorysthenes beli*** Lameere, 1911

แมลงแม่แดดผิวน้ำเล็ก

This species, bright reddish-brown, head finely punctured above; antennal segments 6-10 angulate at apices, antennal tubercles widely separated; pronotum much less than twice as broad as long, with basal angle sharps; elytra long and not very broad, rounded at apices.

Length 33-42 mm.

Distribution: N. Vietnam, Laos, Thailand (Wiang Pa Pao).

A16. ***Dorysthenes buqueti*** (Guérin, 1844)

ด้วงหนวดยาวอ้อย แมลงแม่แดดธรรมดา

Reddish-brown, head small, closely and strongly punctured above, antennal tubercles separated by a narrow but deep median groove, antennal segments 4-10 sharply angulate at apices; elytra broad slightly convex above.

Length 20-55 mm.

Distribution: India, Myanmar, Malaysia, Java, Laos, Thailand.

Host : Bamboo roots and sugarcane.

(1.3 X)



♂



♂△



♀

A15. *Dorysthenes beli*

♂



♀

A16. *Dorysthenes buqueti*

♂△

A17. *Dorysthenes granulosa* (Thomson, 1861)

แมลงแม่แดดชาเรียว

Dark reddish-brown, antennal tubercles adjacent in front, with a pair of short narrow ridges between the eyed-ridges, narrowly separated; pronotum with two large teeth, smooth and shining.

Length 23-65 mm.

Distribution: India, Myanmar, N. Vietnam, S. China, Laos, Thailand.

Host : *Quercus* (ก่อ).

A18. *Dorysthenes walkeri* (Waterhouse, 1840)

แมลงแม่ฝน

Entire body is dark reddish brown to black, head long with a longitudinal groove at the median line, mandibles large and long, curving slightly downwards; pronotum with three large teeth at each side. Adults have been observed flying and walking in the rain.

Length 28-76 mm.

Distribution: Myanmar, N. Vietnam, Laos, Thailand (Kanchanaburi, Tak, Wiang Pa Pao).

(1.4 X)

A17. *Dorysthenes granulose*

(1.1 X)

A18. *Dorysthenes walkeri*

Prionomma White, 1853

A19. *Prionomma bigibbosus* (White, 1853)

ด้วงหนวดยาวอกหนามคู่

Dark reddish-brown to nearly black, medium to large sized longhorn, pronotum with two large flattened teeth at each side at the front corner and the middle, the hind corner with a sharp angle, the dosum with two raised knobs above of each side; antennal segments at least the terminal ones with fine longitudinal grooves; third tarsal segment slightly cleft, with a narrow lobe.

Length 25-47 mm.

Distribution: India, Myanmar, Laos, Thailand (Wiang Pa Pao).

Tribe Anacolini

Antenna flattened; 3rd segment only a little longer than scape; prothorax with basal tooth at side; elytron often abbreviated.

Sarmyds Pascoe, 1867

A20. *Sarmyds antennatus* Pascoe, 1867

ด้วงหนวดยาวหนวดแบน

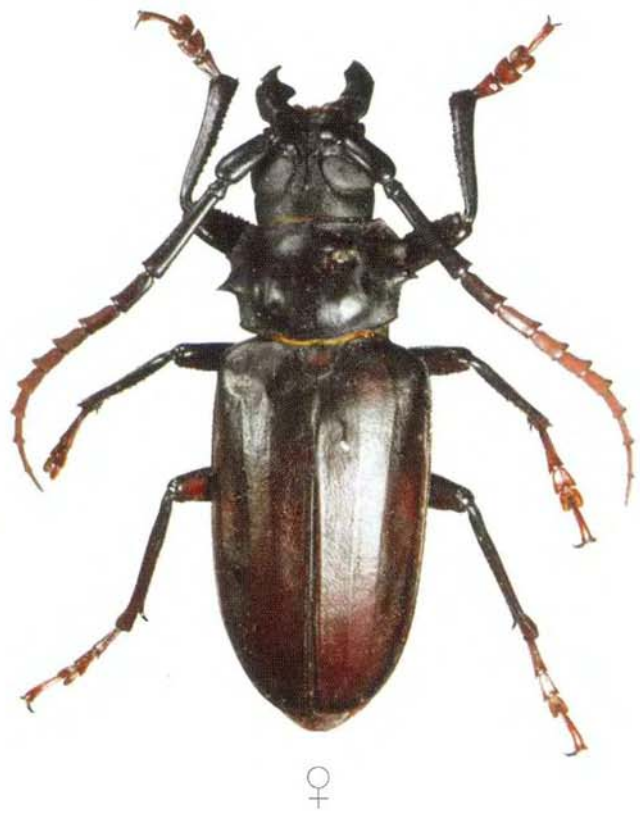
Dark reddish brown, antennae flattened, pale brown and darker at the joints of the segments; antennal segment 3 longer than 1, pronotum with a strong tooth at side; elytra with three to four raised longitudinal ridges of each elytron, the intervals and the ridges strongly sculptured.

Length 15-24 mm.

Distribution: Sunda Is., Myanmar, India, Andaman Is., Taiwan, Laos, Thailand.

Host : *Cryptomeria japonica* (สนญี่ปุ่น), *Engelhardtia* (ฮ้อยจัน คำหาด).

(1.2 X)

A19. *Prionomma bigibbosus*

(2.0 X)

A20. *Sarmyds antennatus*

SUBFAMILY PHILINAE

Philus Saunders, 1853

A21. *Philus costatus* Gahan, 1893

ด้วงหนวดยาวอกทอง

Head, elytra and antennae dark brown; pronotum golden brown and swollen in the middle; head rounded, eyes rather prominent; scutellum golden brown; elytra with two raised costae, the apical margins slightly raised and with golden fine hairs.

Length 15-23 mm.

Distribution: Laos, Thailand (Doi Pha Hom Pok, Phu Khieo).

SUBFAMILY LEPTURINAE

Tribe Lepturini

Head long, narrowed behind eyes; fore coxa conical; antennal segment 2 not longer than broad; Third and 4th antennal segments neither abbreviated nor very hairy.

A22. *Srangalia* Serville, 1835

Srangalia duffyi Gressitt & Rondon, 1970

ด้วงหนวดยาวเลียนต่อ

Body usually deeper than wide and narrowed posteriorly; antenna slender, only rarely thickened distally, segments 6-10 whitish; prothorax slightly constricted near apex; elytron narrowed behind base in male, not strongly constricted in female, with arcuate pale mark and band at middle connected parallel to suture; tarsal segment 3 usually cleft for less than ½ above.

Length 8 mm.

Distribution: Laos, N. Thailand (Wiang Pa Pao).



(2.0 X)



♂



♂



♀



♀

A21. *Philus costatus*

(1.7 X)



♀



♀ ♂

A22. *Srangalia duffyi*

FAMILY CERAMBYCIDAE

SUBFAMILY CERAMBYCINAE

Prothorax without lateral margin; labrum free; maxilla with inner lobe well developed; fore-coxa projecting, rounded, rarely transverse; mesonotum usually with a finely striated stridulating area, undivided; wing without closed cell in anal sector.

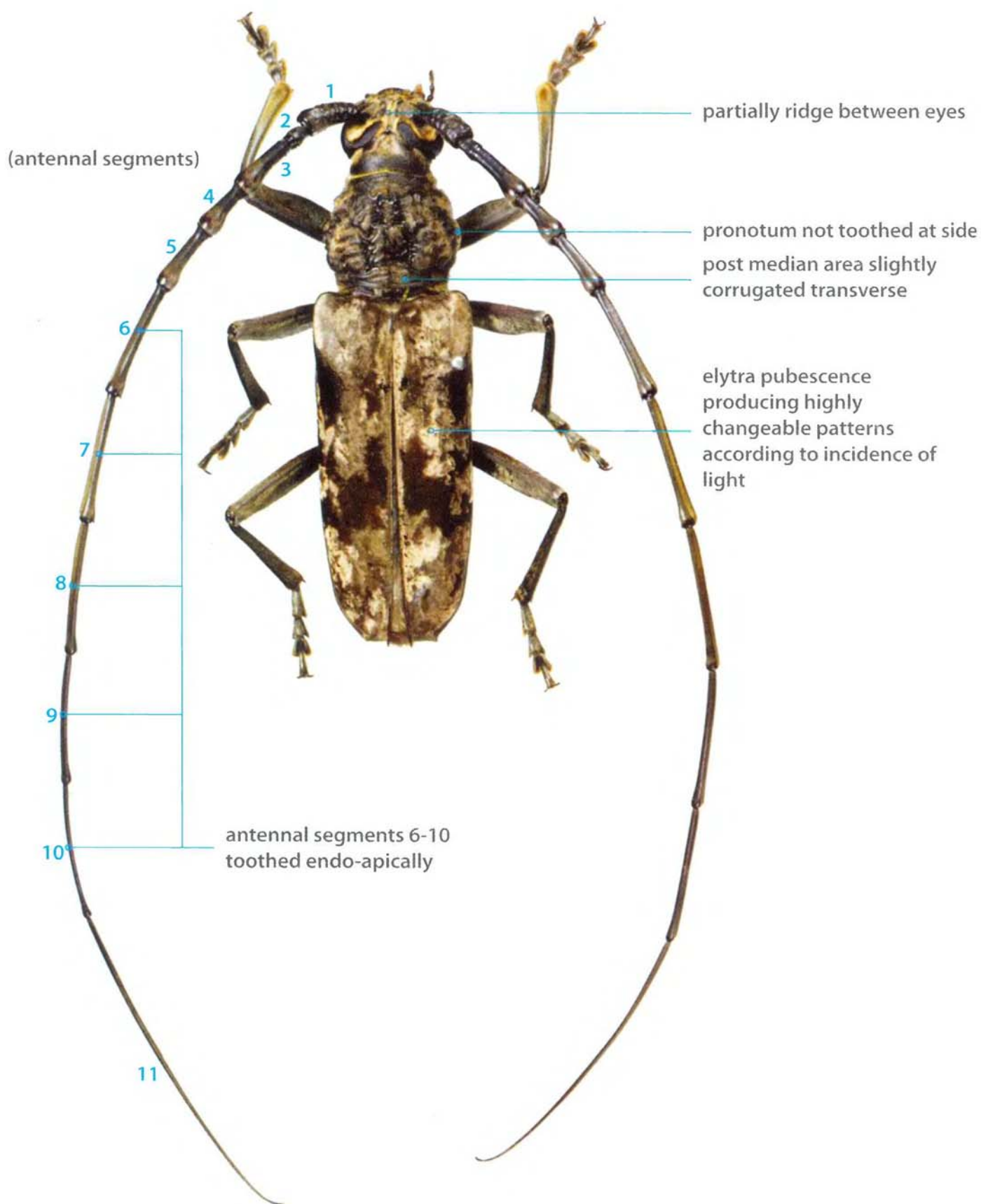


Figure 51. Long-horned beetle, *Aeolesthes aurifaber*, male. Dorsal view.



Figure 52. Wasp-like long-horned beetles, 1-2. *Xylotrechus chinensis*, male. It feeds on tree sap at wounded bark of trees.



Figure 53. Phikhun (*Mimusops elengi*) flower feeder, *Pachyteria dimidiata*.

Tribe Methiini

Fore coxa prominent, conical or subcornical, angulate externally, often broadly open behind; antenna long.

Oplatocera White, 1853

A23. ***Oplatocera callidiosa*** White, 1835

ด้วงหนวดยาวสองบั้ง

Golden brown, with reddish-brown markings; pronotum finely fringed with reddish hairs and with a blunt tooth at sides; elytra marginated, with two raised costae and two broad oblique bands of reddish-brown parallel between them, extending from outer edges obliquely downwards to the suture at front half and behind half of each elytron.

Length 60-67 mm.

Distribution: India, Laos, Vietnam, Thailand (Khao Yai).

Xystrocera Serville, 1834

Reddish-brown; antennae slightly longer than elytra in male, scape with an apical spine above; pronotum without a tooth at sides; elytra with a pair of green longitudinal stripes, the apical half of femora swollen.

A24. ***Xystrocera festiva*** Thomson, 1861

ด้วงหนวดยาวขีดเขียวข้าง

This species, elytra reddish-brown, with a pair of prominent green longitudinal stripes at the outer margins.

Length 32-45 mm.

Distribution: India, Myanmar, Vietnam, Laos, Malaysia, Java, Sumatra, Thailand (Chiang Dao).

Host : *Albizia lebbeckoides* (คาง), *Pithecellobium* sp. (มะขามเทศ), *P. tenue* (กัลปังขิงสาร), *Theobroma cacao* (โกโก้), *Coffea arabica* (กาแฟ), *Parkia peciosa* (สะตอ).

A25. ***Xystrocera globosa*** (Olivier, 1795)

ด้วงหนวดยาวขีดเขียวกลาง

Reddish-brown, with a green longitudinal stripe in the middle of each elytron.

Length 15-31 mm.

Distribution: Egypt, Japan, Korea, China, Taiwan, Myanmar Laos, Malaysia, Indonesia, Philippines, Thailand (Wiang Pa Pao).

Host : *Albizia* (พฤษภ), *Adenanthera* (มะกล่ำต้น), *Acacia* (กระถินณรงค์), *Cassia* (ราชพฤษภ), *Acrocarpus* (ทางซิมด), *Bauhinia* (กระไดลิง), *Grewia* (ส้มกุ้งน้อย), *Bombax* (จ้าว), *Xylia* (แดง).



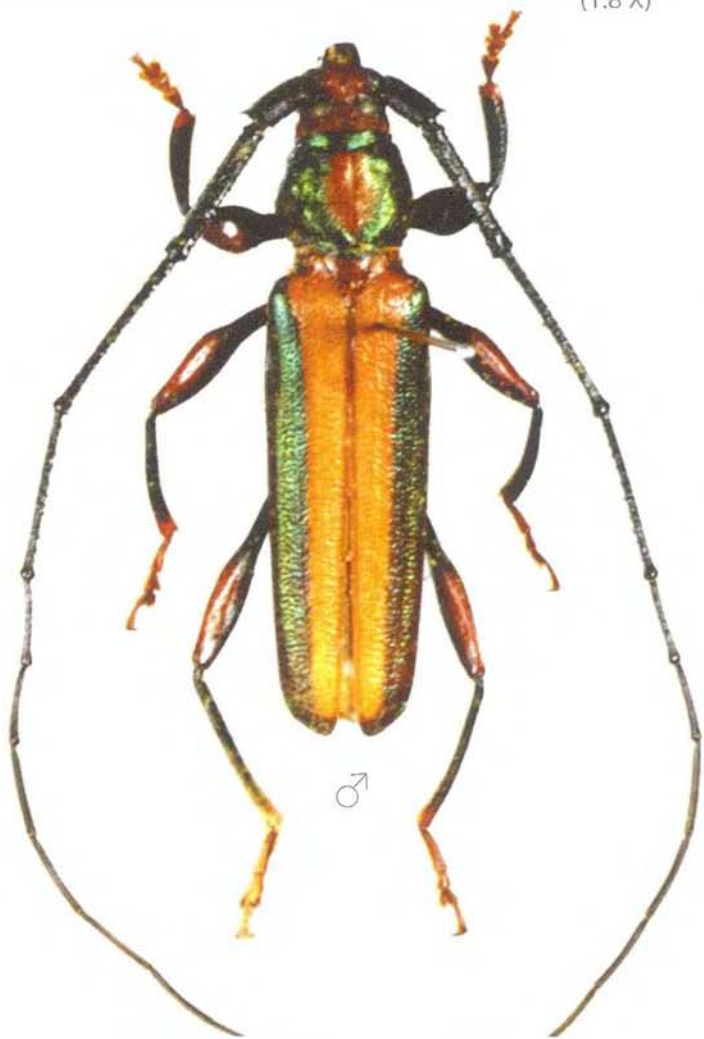
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A23. *Oplatocera callidiosa*

(1.8 X)

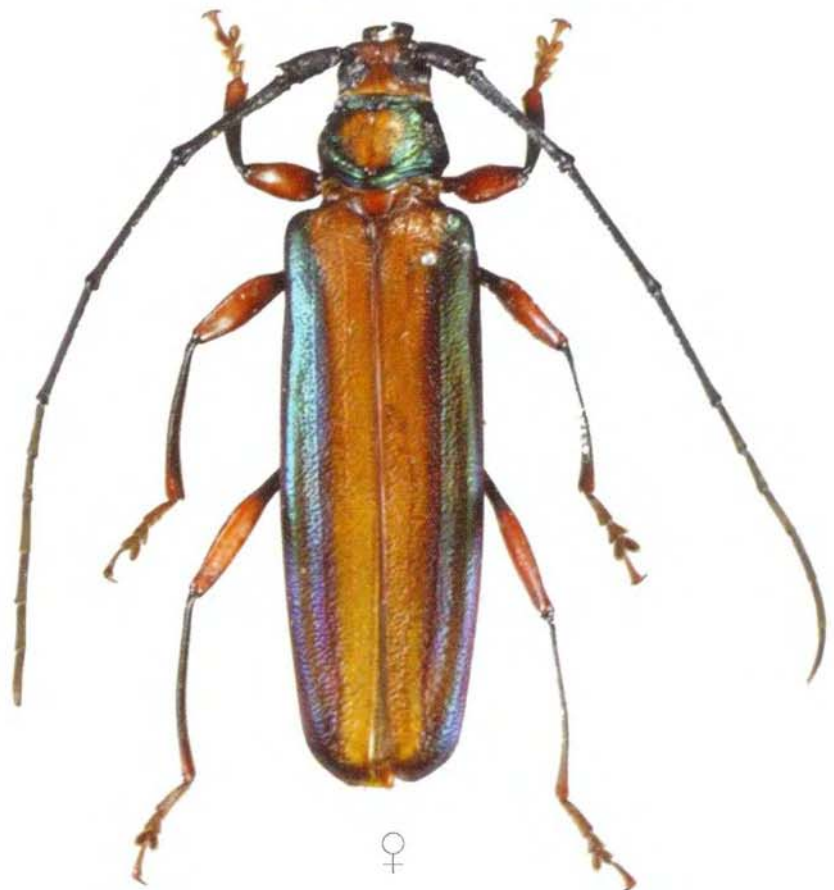


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(2.4 X)



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A25. *Xystrocera globosa*

♀

A24. *Xystrocera festiva*

Tribe Hesperophanini

Fore coxal cavity angulate externally; terminal palpal segment broadly dilated; hind femur usually clavate.

***Gnatholea* Thomson, 1861**

A sub-transverse depression between frons and clypeus; elytron often bears smooth pale callosities, usually with short narrow longitudinal white stripes.

A26. *Gnatholea ebrurifera* Thomson, 1861

ด้วงหนวดยาวจุดขาวคู่บาง

A small hairy brown, antennae brown, fringed with long hairs; pronotum swollen and rounded at the middle; elytra brown, basal elytral callosity single, sometimes not white or even obsolete, posterior callosities usually of 2 isolated narrow white stripes in the middle of each elytron.

Length 17-23 mm.

Distribution: India, Myanmar, S. China, Laos, Cambodia, Thailand (Kanchanaburi).

Host : *Irvingia* (กระบก), *Citrus* (ส้ม), *Ficus* (มะเดื่อ ไทร).

A27. *Gnatholea subnuda* Lacordaire, 1869

ด้วงหนวดยาวจุดขาวคู่หนา

Dorsum of the body brown, with dark brown to black raised markings above; pronotum with a strong tooth at side; elytra with a moderately large, basal elytral callosity double, posterior callosity double, sometimes not very white.

Length 21-31 mm.

Distribution: Laos, Malaysia, Thailand (Doi Pha Hom Pok).

Stromatium* Serville, 1834*A28. *Stromatium longicorne* (Newman, 1855)**

ด้วงหนวดยาวขนตาลอ่อน

A brownish species, antenna is fringed primary internally with long brownish hairs; prothorax of male with a large hairy depression at side; elytra without white stripes.

Length 11-29 mm.

Distribution: Assam, Myanmar, S. China, Taiwan, Laos, Thailand (Wiang Pa Pao).

(2.4 X)



♀

A26. *Gnatholea ebrurifera*

(1.35 X)



♂

A28. *Stromatium longicorne*

♀ △

A27. *Gnatholea subnuda*

Zoodes Pascoe, 1867

Prothorax of male lacking a hairy depression at side; antenna fringed with long brownish hairs at all sides.

A29. **Zoodes fulguratus** Gahan, 1906

ด้วงหนวดยาวลายน้ำซึม

A small yellow-brown species, antennae fringed with long golden hairs all around; pronotum without a tooth at sides; elytra yellowish-brown, marked with darker brown at base, an irregular area forming by two zigzag-transverse bands on each elytron.

Length 23 mm.

Distribution: Myanmar, Laos, Vietnam, Thailand (Wiang Pa Pao, Fang).

Tribe Cerambycini

Inter-coxal process of prosternum wide, broadened distally.

Aeolesthes Gahan, 1890

Head is partially ridge between eyes; elytra pubescence producing highly changeable patterns according to incidence of light. It differs from **Hoplocerambyx** in antennal segments 3-10 generally not toothed endo-apically.

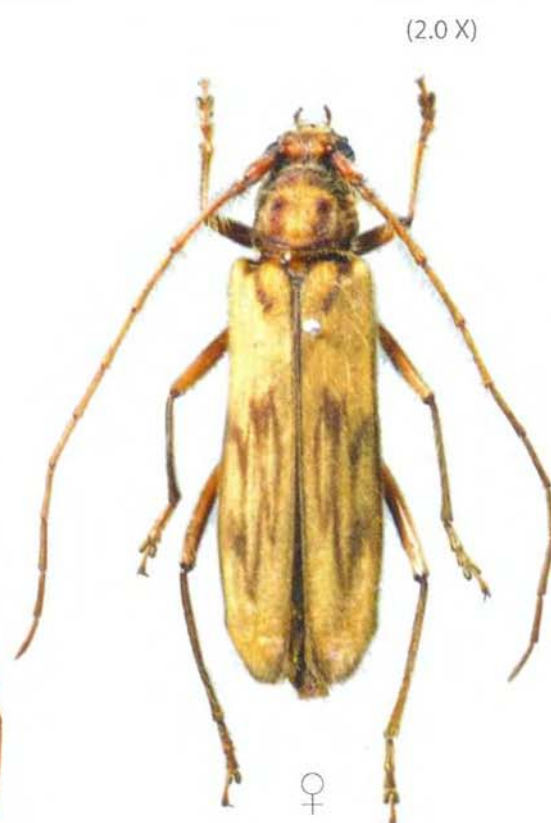
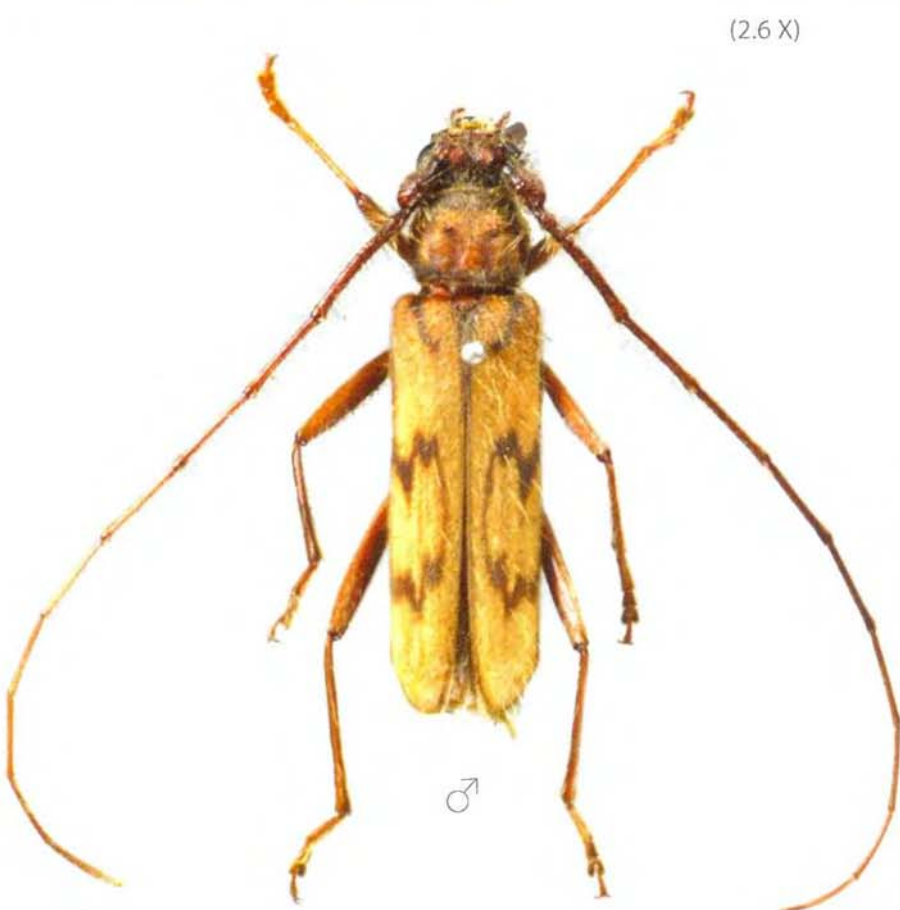
A30. **Aeolesthes aureopilosa** Gressitt & Rondon, 1970

ด้วงหนวดยาวเงาสันกลาง

Pronotum multi-tuberculate, with a prominent strong, long median ridge in central portion; golden pubescent; elytron with varying pattern, not striped along the suture; antennal segments usually from 4 onwards fringed with brown hairs underside.

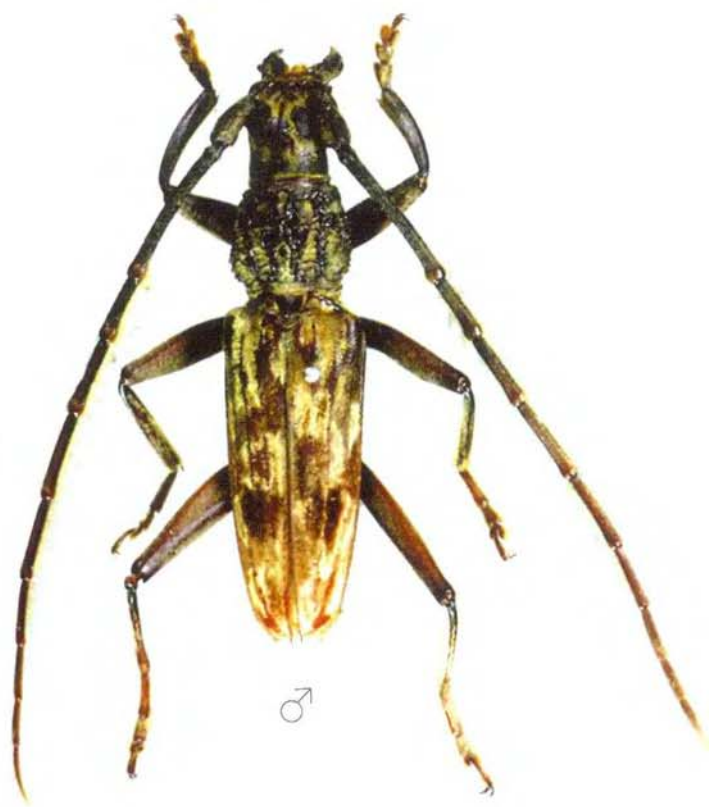
Length 26-31 mm.

Distribution: Laos, N. Thailand (Mae Taeng).



A29. *Zoodes fulguratus*

(1.93 X)



A30. *Aeolesthes aureopilosa*

A31. *Aeolesthes aurifaber* (White, 1853)

ด้วงหนวดยาวเงาหลังย่น

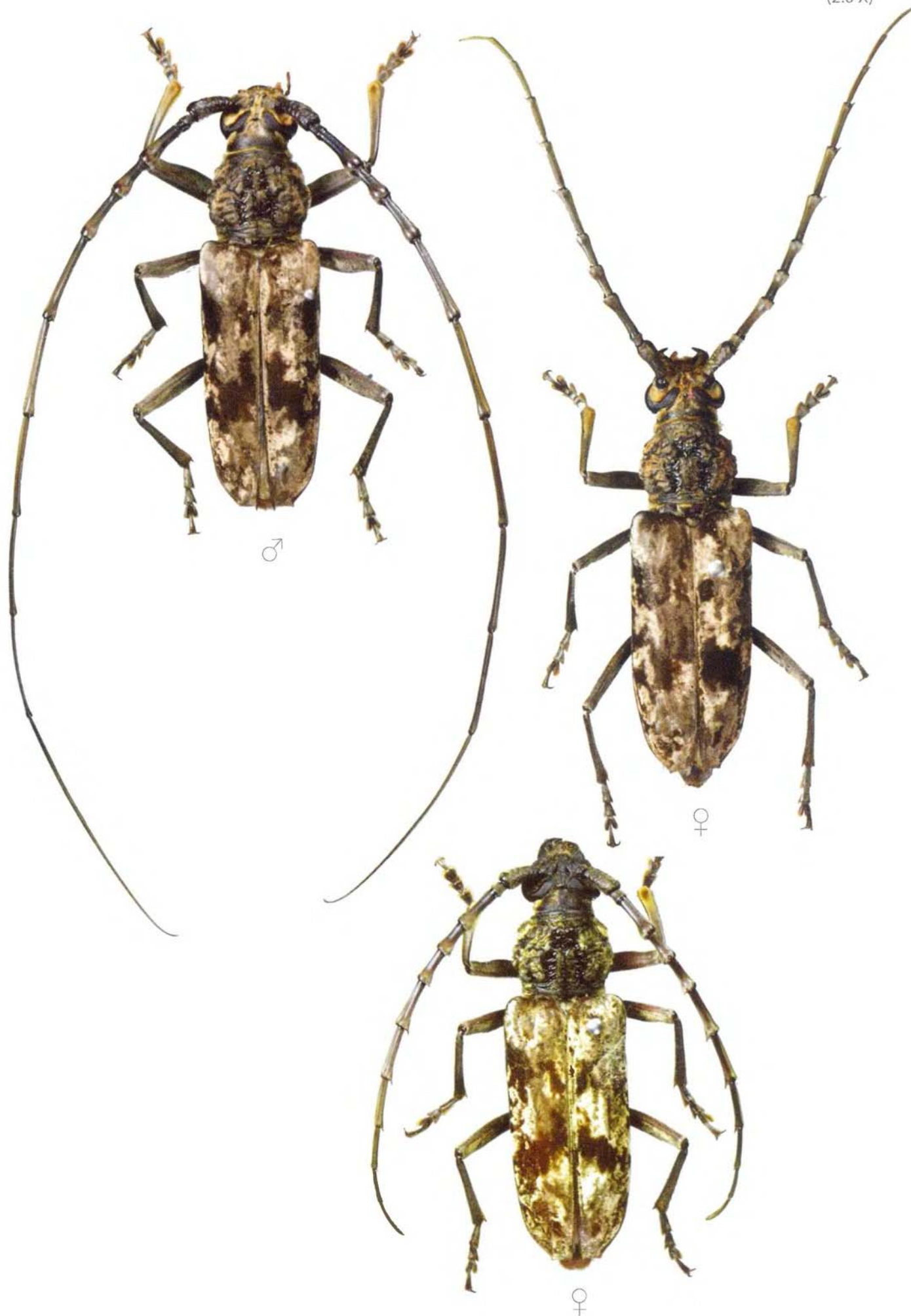
Pronotum not toothed at sides, strongly corrugated (wrinkled) transversely, post median area slightly corrugated transverse or slightly concave anteriorly; dorsal pubescence somewhat silvery; antennal segments 6-10 toothed endo-apically.

Length 33-37 mm.

Distribution: Laos, Kalimantan, Malaysia, Thailand (Bangkok, Kamphaeng Saen).

Host : mango, *Bombax malabaricum* (จ๊ว).

(2.0 X)

A31. *Aeolesthes aurifaber*

A32. *Aeolesthes laosensis* Gressitt & Rondon, 1970

ด้วงหนวดยาวเงาลาว

Pronotum not transversely corrugated, post-median raised area is much longer than broad, zigzag at side, narrowly produced anteriorly; elytral pubescence somewhat golden, antenna of the female 1/8 longer than the body.

Length 28-34 mm.

Distribution: Laos, N. Thailand (Doi Pha Hom Pok).

A33. *Aeolesthes sinensis* Gahan, 1890

ด้วงหนวดยาวเงาอกหนอน

Prothorax is subangulate at side, pronotum without a somewhat flattened post-median area, pronotal vermiculations are largely transverse or irregular; antenna of female not much shorter than the body.

Length 25-38 mm.

Distribution: India, Myanmar, S. China, Taiwan, Laos, Thailand (Krabi).

Host : *Cedrela* (ยมหอม), *Citrus* (ส้ม), *Diospyros* (ตะโก มะเกลือ), *Acer* (ก้าม).

A34. *Cyriopalus wallacei* Pascoe, 1866

ด้วงหนวดยาวหนวดไฟ

A medium sized long-horned beetle with a special antennal shaped, pectinate, containing 12 segments, segment 3-11 each with an external process longer than the segment proper; entire body yellowish-brown; pronotum without a tooth at side.

Length 35-45 mm.

Distribution: Myanmar, Laos, Malaysia, Sumatra, Thailand (Doi Pui, Chiang Dao).



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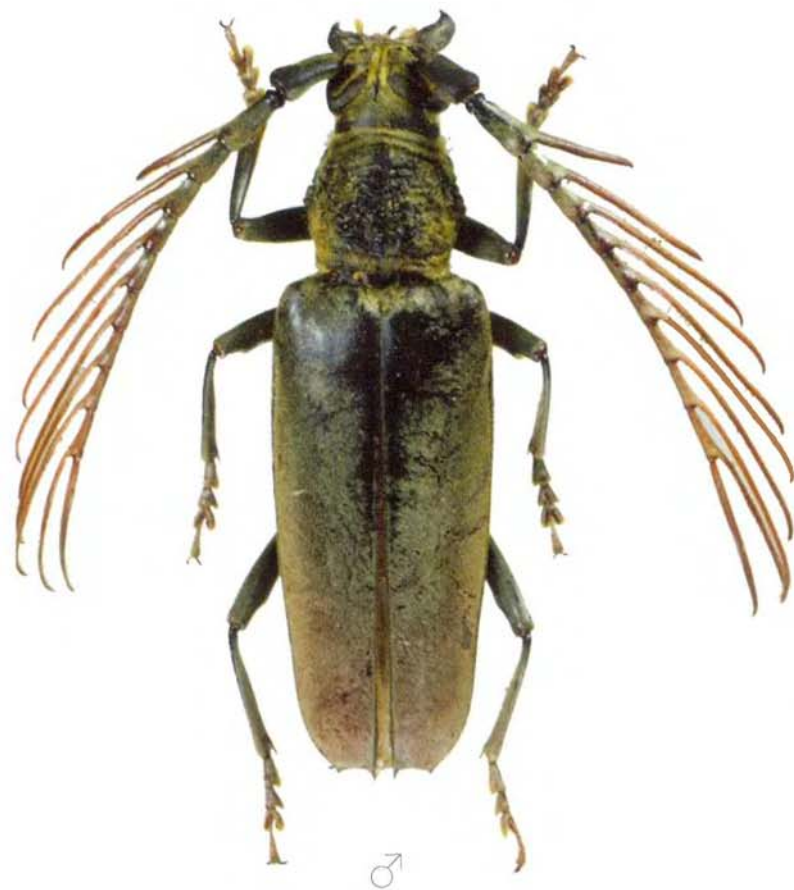
A32. *Aeolesthes laosensis*

(2.0 X)

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A33. *Aeolesthes sinensis*

♂

A34. *Cyriopatus wallacei*

Derolus Gahan, 1891

Femora finely carinate on each side of hind ridge; body rather smooth and subgrabrous above.

A35. ***Derolus argenteosignatus*** Gressitt & Rondon, 1970

ด้วงหนวดยาวแถบเงินกลาง

Elytron with more than 1 distinct narrow bands, middle silvery band curving forward along suture, 2nd fusing as a sutural stripe; posterior half of elytron grayish; pronotum unmarked.

Length 16 mm.

Distribution: Laos, Thailand (Sai Yok).

Hoplocerambyx Thomson, 1864

Antennal segments 3-10 tooth endoapically, head deeply grooved between eyes.

A36. ***Hoplocerambyx spinicornis*** (Newman, 1942)

ด้วงหนวดยาวหัวร่อง

Dark reddish-brown, long and slender body; head with eyes separated by a deep groove; antennae in male longer than the elytra by a fifth to a third of their length whereas those of the female shorter than the elytra; pronotum rather long and strongly rugose above.

Length 20-60 mm.

Distribution: Nepal, India, Afghanistan, Malaysia, Sumatra, Kalimantan, Philippines, Thailand (Khao Yai, Chiang Dao).

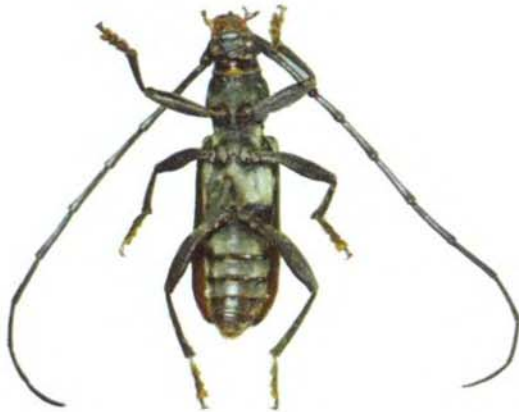
(2.2 X)



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A35. *Derolus argenteosignatus*

(1.36 X)



♂



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A36. *Hoplocerambyx spinicornis*

Massicus (Pascoe, 1864)

Antennal segment 3 much long than 4; 3 and 4 not usually swollen; prothorax not toothed at side.

A37. **Massicus trilineatus** (Pic, 1933)

ด้วงหนวดยาวสามขีดดำ

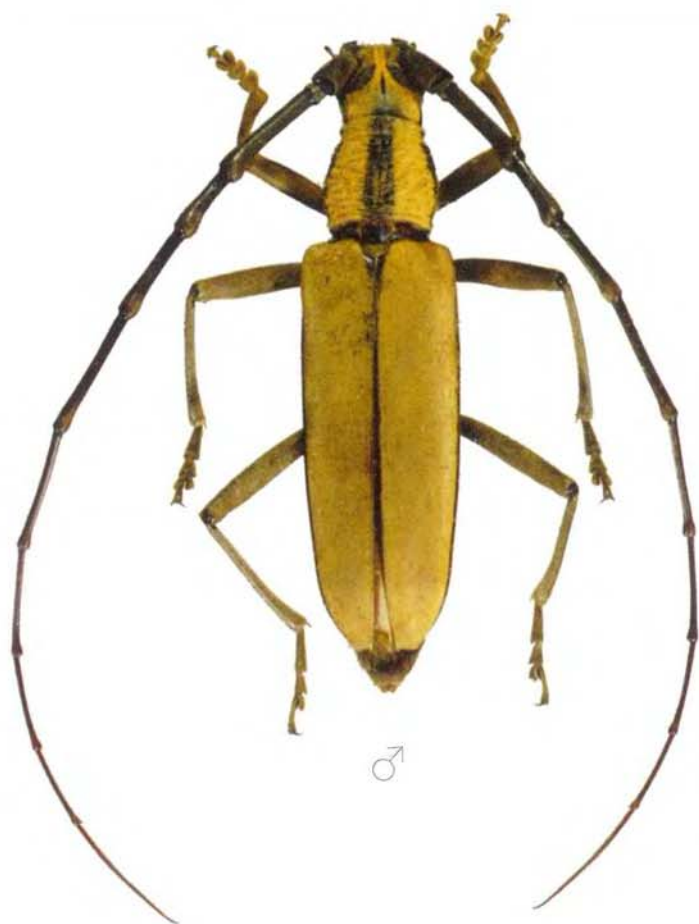
Yellow-brown or pubescent upon head, pronotum and elytra; pronotum long, broadest at behind the middle, strongly rugose above and with three black longitudinal stripes at median and lateral margins.

Length 30-50 mm.

Distribution: Vietnam, Laos, Thailand (Khao Yai, Wiang Pa Pao).



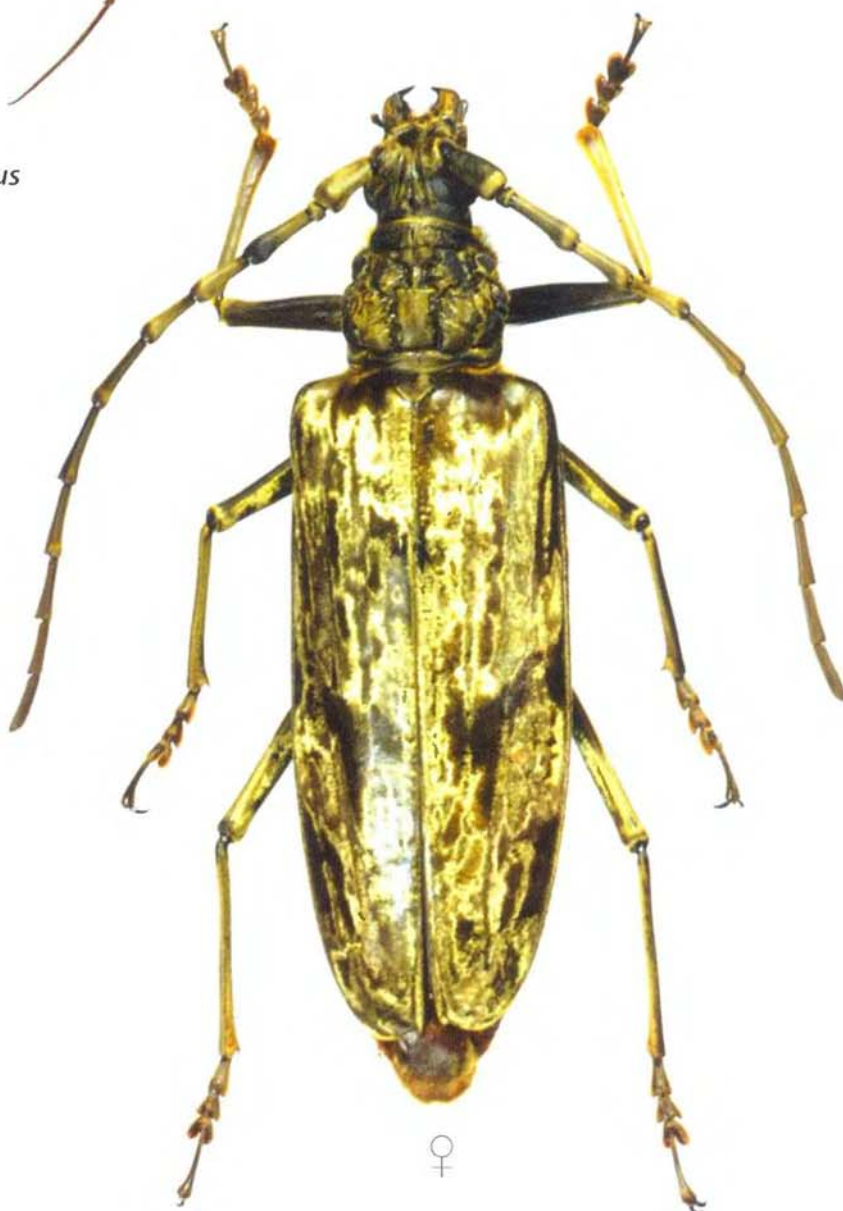
(1.35 X)



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A37. *Massicus trilineatus*

♀

A38. *Neocerambyx gigas*

Neocerambyx Thomson, 1860

Antennal segment 3 much longer than 4, 3 and 4 often swollen apically or pre-apically; prothorax often obtuse or bluntly toothed at side.

A38. ***Neocerambyx gigas*** Gahan, 1891

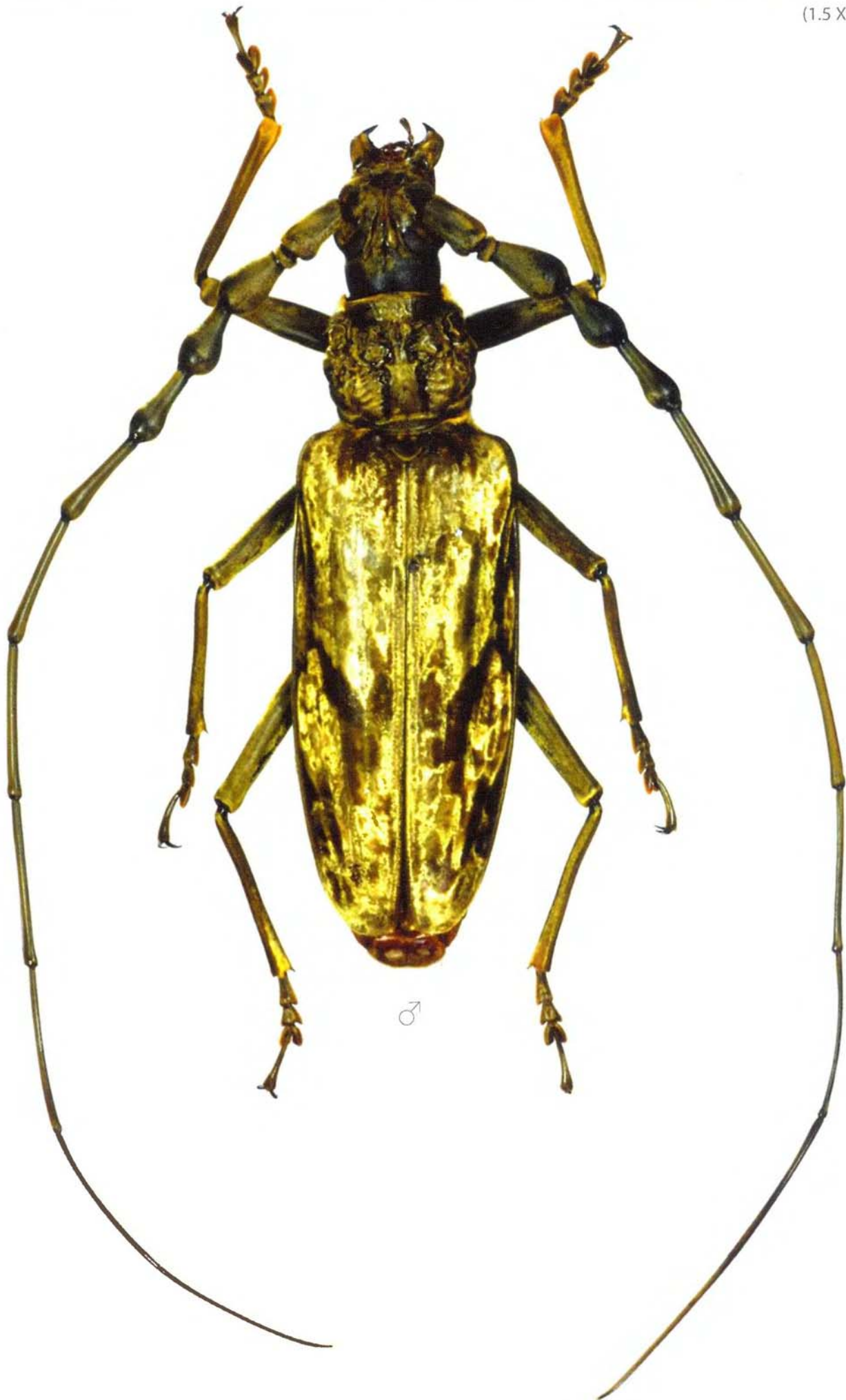
ด้วงหนวดยาวโคนลูกบิด

A giant long-horn, pronotum long, without a tooth at side, strongly rugose above; elytra entirely densely covered with a neat, even layer of white, brown and pubescence black; antennal segments 3-5 rather long, spherical shaped near the apical end of each segment in male.

Length 75-85 mm.

Distribution: Malaysia, Kalimantan, Thailand (Doi Pha Hom Pok).

(1.5 X)

A38. *Neocerambyx gigas* (cont.)

A39. ***Neocerambyx grandis*** Gahan, 1891

ด้วงหนวดยาวยักษ์ย่น

A plain giant longhorn, very closely similar to the former species; antennae very long, but basal segments 3-5 more regularly, not spherical-shaped near the joints; pronotum not very long, strongly rugose above; elytra rather uniformly colored, with less white reflection.

Length 60-85 mm.

Distribution: Malaysia, Thailand (Doi Pha Hom Pok).

(1.2 X)

A39. *Neocerambyx grandis*

Plocaederus Thomson, 1861

Head is weakly ridged between eyes; pronotum broader than long, strongly rugose above toothed at side; elytra well over 3x as long as broad; fore coxal cavity strongly angulate externally.

A40. ***Plocaederus obesus*** Gahan, 1890

ด้วงหนวดยาวนูน

This species, antennae brown, the joints darker brown, segments 5-10 each with external tooth; elytra fairly smooth, finely pubescence yellowish-brown; legs brownish.

Length 25-47 mm.

Distribution: India, Myanmar, S. China, Vietnam, Laos, Thailand (Chiang Mai).

Host : *Ceiba* (นุ่น), *Bombax* (จ้าว), *Buchanania* (มะม่วงนกก), *Butea* (ทองกวาว), *Cordia* (มันนกก), *Garuga* (ตะคร้ำ), *Gmaelina* (ซ้อ), *Kydia* (เกียงฝ้าย), *Mangifera* (มะม่วง), *Shorea* (เต็ง), *Terminalia* (สมอไทย), *Spodias* (มะกอกฝรั่ง), *Sterculia* (สำโรง).

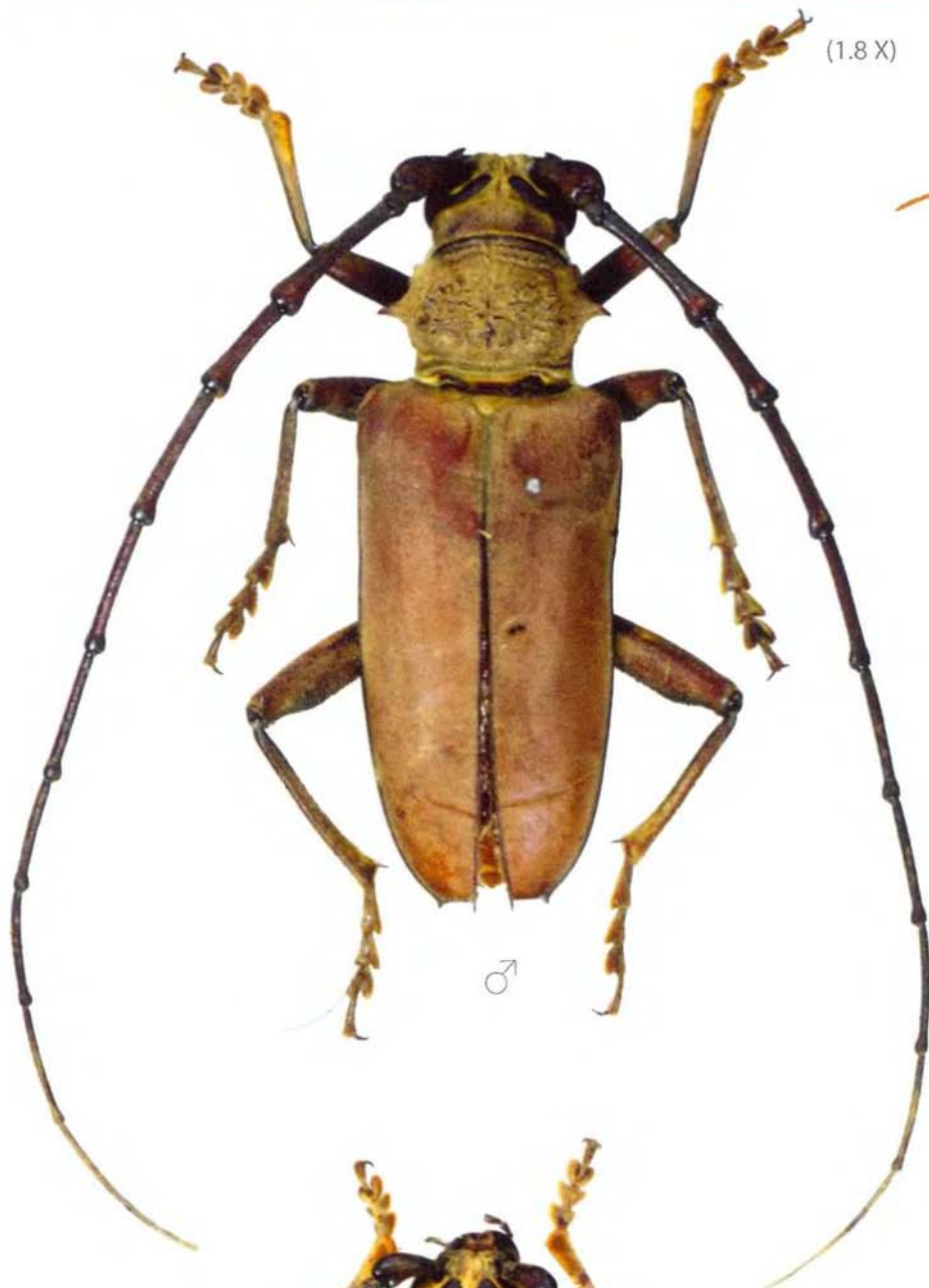
A41. ***Plocaederus ruficornis*** (Newman, 1842)

ด้วงหนวดยาวมะม่วงขาแดง

Antennae almost entirely reddish-brown, the segments 5-10 with a sharp tooth externally, smooth without hairs; scutellum reddish, smooth and shining; elytra dark reddish-brown, legs reddish-brown.

Length 29-36 mm.

Distribution: Philippines, Malaysia, Laos, Thailand (Chiang Dao).



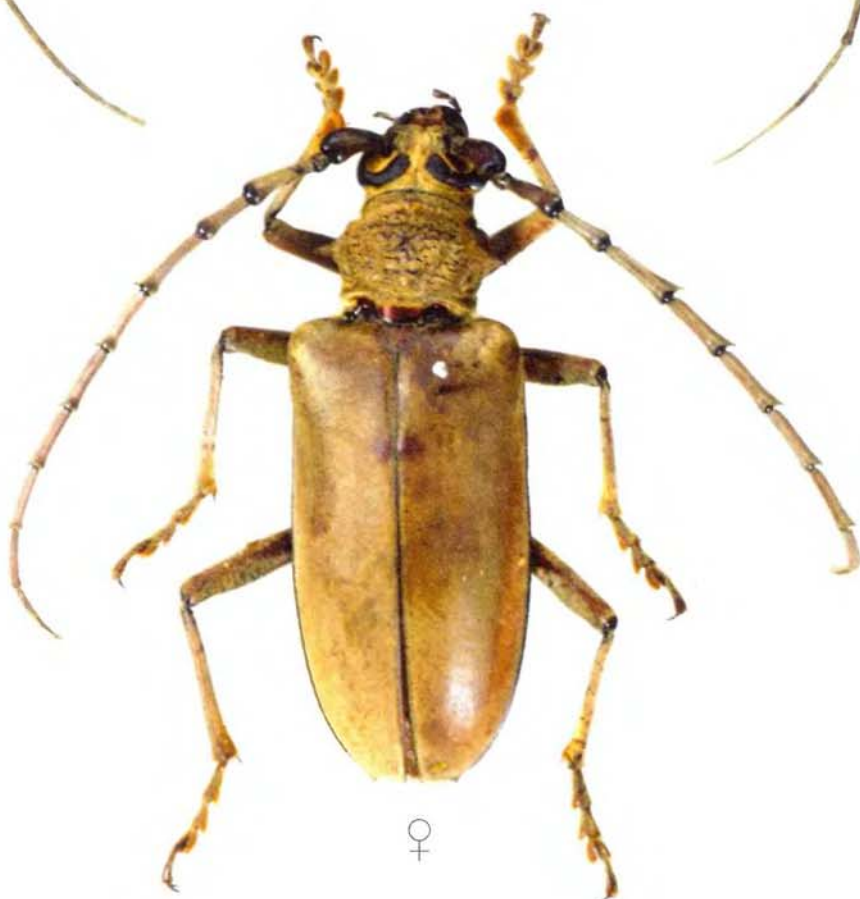
(1.8 X)

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(2.1 X)

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♀

A40. *Plocaederus obesus*

♀

A41. *Plocaederus ruficornis*

Rhytidodera White, 1853

Characteristics of the genus: Eyes prominent; antennae in male as long as the elytra or a little bit longer; elytra parallel-sided, usually with pubescence brownish-gray above.

A42. ***Rhytidodera integra*** Kolbe, 1886

ด้วงหนวดยาวหนวดแบนค้อ

Antennae in male bear apical angles of most segments; elytra brown, with four or more broken longitudinal stripes of pubescence brownish-gray of each elytron.

Length 25-32 mm.

Distribution: China, Korea, Laos, Thailand (Doi Pha Hom Pok).

Host : *Ficus retusa* (ไทรย้อยใบทู่).

A43. ***Rhytidodera grandis*** Thomson, 1865

ด้วงหนวดยาวหนวดแบนย้อย

Antennae in male with apical angles of segments 3-6 about one third as long as respective segments; elytra dark reddish-brown, with partly connected to stripes of pubescence brownish-gray, apical margin with two spines of each elytron.

Length 40-43 mm.

Distribution: Laos, Thailand (Khao Yai, Chanthaburi).



(2.0 X)



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A42. *Rhytidodera integra*

(1.3 X)



♂



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A43. *Rhytidodera grandis*

Xoanoder Pascoe, 1857

Pronotum strongly grooved longitudinally, four or more of each side; elytra deeply punctured, partly grooved and densely pubescent; antennal segments angulated apically, with fine brown pubescence.

A44. ***Xoanoder regularis*** Gahan, 1890

ด้วงหนวดยาวสลักข้าง

This species, pronotum dark brown, with four or five raised ridges of each side; scutellum brownish; elytra deeply punctured, brownish pubescent above, except a small dark brown spot behind the scutellum and an oblong area at both sides which remaining dark brown.

Length 21-22 mm.

Distribution: India, Myanmar, Laos, Thailand (Doi Inthanon).

Host : *Ficus* sp. (มะเดื่อ). *Calycopteris floribunda* (ข้าวตอกแตก).

A45. ***Xoanoder striata*** Gressitt & Rondon, 1970

ด้วงหนวดยาวสลักกา

Reddish-brown to dark brown, with pubescent white as follows: a pair of stripes between the eyes, two longitudinal stripes at lateral margins of pronotum, some longitudinal stripes upon the elytra forming an X-shaped marking above the middle; pronotum dark brown, deeply punctured and grooved longitudinally; elytra reddish-brown, except the front half dark brown.

Length 19-27 mm.

Distribution: Kalimantan, Laos, Thailand (Phu Kae - Saraburi).

Tribe Callidiopini

Antennal segments not spines; eye large, very coarsely faceted.

Ceresium Newmann, 1842

Antennal segment 4 is usually shorter than 1; prothorax usually widened in the middle.

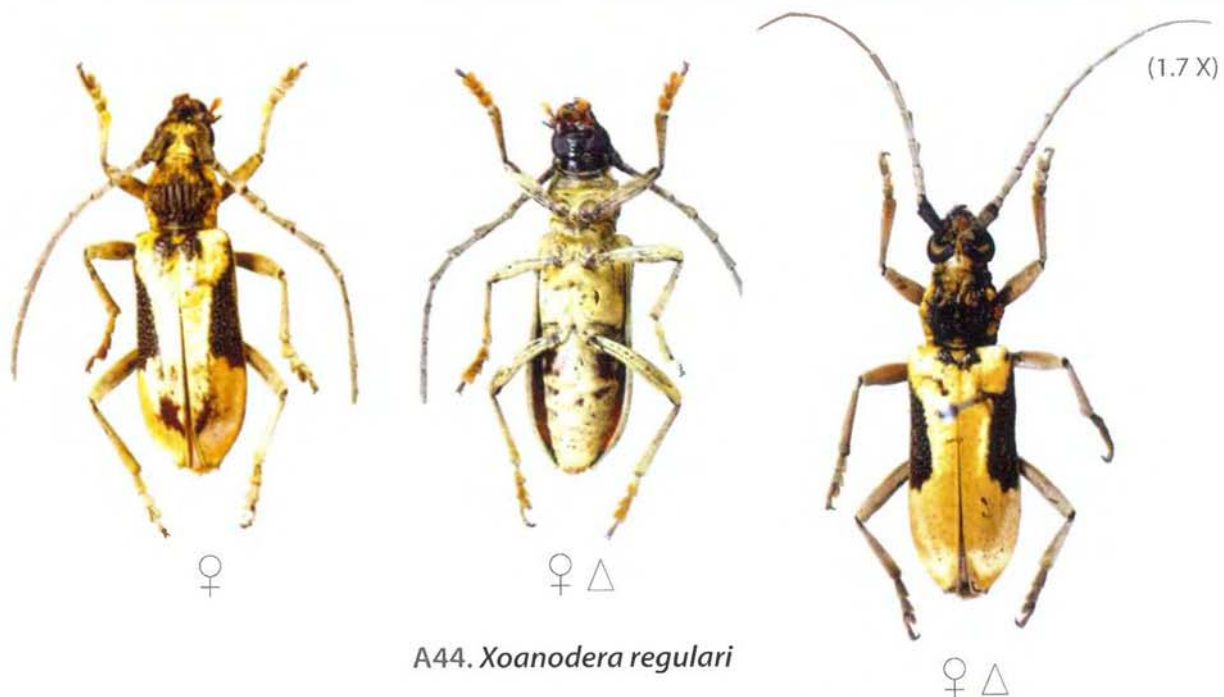
A46. ***Ceresium leucosticticum*** White, 1855

ด้วงหนวดยาวจุดขนขาว

Elytron with 5 small distinct marks of white pubescence; antennal segment 4 as long as 1; pronotum with 2 to 3 spots or stripes of white on each side of disc.

Length 9-13 mm.

Distribution: Assam, Myanmar, Hainan, Sumatra, Laos, Thailand (Sai Yok, Doi Pha Hom Pok).

A44. *Xoanoderes regulari*A45. *Xoanoderes striata*A46. *Ceresium leucosticticum*

Trinophylum Bates, 1878

Tibiae fairly straight; pronotum strongly punctured.

- A47. ***Trinophylum descarpentriesi*** Gressitt & Rondon, 1970

ด้วงหนวดยาวโพ

Bright reddish-brown, strongly punctured above pronotum and elytra; with pubescence white as follows: two spots at the front and hind corners of each side of pronotum, a spot on scutellum and five irregular spots on each elytron; all femora swollen at the apical half.

Length 16-18 mm.

Distribution: Laos, Thailand (Sai Yok).

Host : *Ficus religiosa* (โพ).

Tribe Prothemini

Legs are long, hind femur usually exceeding abdominal apex; antenna shorter than body in male, very stout.

Prothema Pascoe, 1856

Antenna with segments 6-10 moderately flattened and acute; elytron sub-evenly convex.

- A48. ***Prothema aurata*** Gahan, 1906

ด้วงหนวดยาวต่อลายเหลี่ยม

Small black, with pubescence yellow above the head, pronotum and elytra, remaining black markings as follows: pronotum, with a pair of longitudinal stripes at both sides of the median line and a pair of stripes at lateral margins; elytra, with a stripe upon the suture, a transverse band across the middle which joining with a longitudinal stripe extending from humeral angle, and a large spot in the middle of posterior half of each elytron.

Length 13 mm.

Distribution: Assam, Laos, Thailand (Wiang Pa Pao).

Tribe Callichromini

Scutellum large, triangular, angulate posteriorly; fore coxal cavity completely or nearly closed posteriorly. Most of genera are often very confusing or uncertain, not clearly isolated.

Anubis Thomson, 1864

Antenna not very slender distally, rarely longer than body in male; hind femur generally not exceeding elytral apex; prothorax usually about as long as broad, usually metallic, not tuberculate at side.

- A49. ***Anubis bipustulatus*** Thomson, 1865

ด้วงหนวดยาวเขียวคู่เหลือง

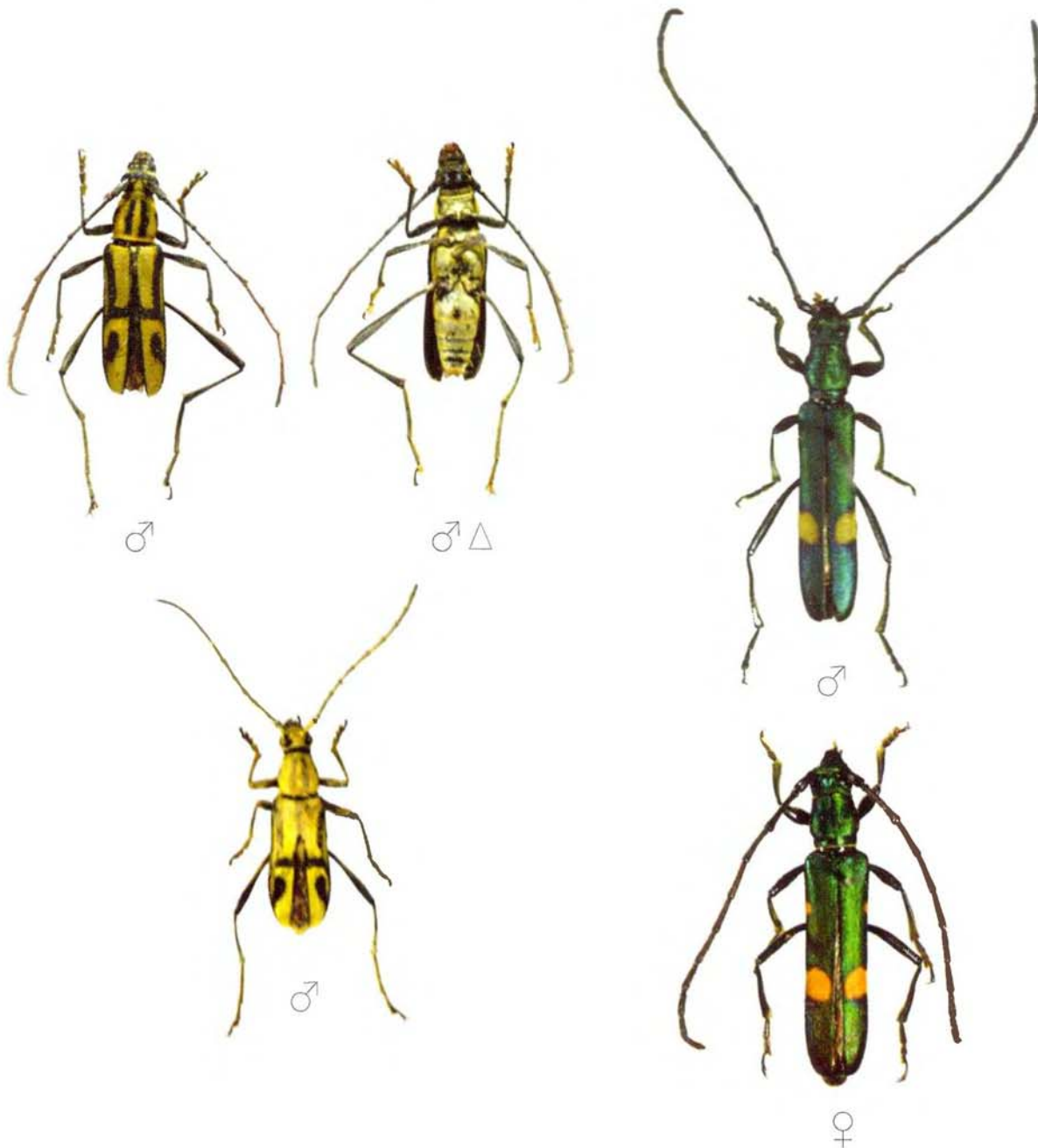
Metallic green; pronotum swollen behind the middle; elytra with a large yellow spot at 2/5 from apex of each elytron extending from external margin to a little closer to the suture.

Length 14-19 mm.

Distribution: India, Myanmar, Laos, Malaysia, Thailand (Doi Pui, Mae Taeng).



(2.1 X)

A47. *Trinophylum descarpentriesi*A48. *Prothema aurata*A49. *Anubis bipustulatus*

A50. *Anubis inermis* (White, 1835)

ด้วงหนวดยาวเขียวสองคู่เหลือง

Blue to blue green, elytron with two transverse yellow bands, each usually $\frac{1}{2}$ to $\frac{2}{3}$ as broad as metallic bands; prothorax about as broad as long, subevenly convex at side.

Length 14-22 mm.

Distribution: W. Pakistan, Sikkim, Myanmar, S. China, Malaysia, Laos, Thailand (Wiang Pa Pao).

Host : *Syzygium* (ชมพู่ ฝรั่ง).

Aphrodisium Thomson, 1864

Antennal scape is conical, toothed ecto-apically; hind femur not reaching elytral apex in either sex; prothorax slightly broader than long; pronotum largely glabrous; elytra generally metallic green.

A51. *Aphrodisium cantori* (Hope, 1940)

ด้วงหนวดยาวทับทิมเขียวเขียว

Antenna entirely dark; pronotum very smooth, shining, with evenly rounded nodes, finely or sparsely punctured, entirely metallic green, blue green or purplish-blue; glabrous and feebly punctured; legs metallic, tarsi pale.

Length 45-50 mm.

Distribution: Assam, Laos, N. Thailand (Wiang Pa Pao).

A52. *Aphrodisium faldermannii* (Saunders)

ด้วงหนวดยาวทับทิมหลังออกแดง

Pronotum very smooth, with evenly rounded nodes, finely or sparsely punctured, partly orange; elytron green, brown or black; antenna sometimes largely orange; tarsi pale.

Length 42-49 mm.

Distribution: S. China, Vietnam, Laos, N. Thailand (Wiang Pa Pao).

(2.2 X)



♀

A50. *Anubis inermis*

♀ △



♀

A51. *Aphrodisium cantori*

(2.9 X)



♂



♀



♀ △

A52. *Aphrodisium faldermanii*

A53. ***Aprodisium neoxenum*** (White, 1970)

ด้วงหนวดยาวทับเรียวแดง

Dorsum largely metallic green, long and slender body, antenna purplish-blue, rather long and slender, longer than twice of the body length in male; middle of pronotal disc flattened, rugulose and densely punctured, with a strong tubercle at side; elytra broad at base, slim and rounded at apices; legs long, femora red, tarsi dark.

Length 34-42 mm.

Distribution: Assam, S. China, Laos, Thailand (Doi Pha Hom Pok).

A54. ***Aprodisium subplicatum*** (Pic, 1937)

ด้วงหนวดยาวทับสองสลับ

Pronotum with 2 oblong finely punctured area alternating with 3 shiny golden weakly corrugated stripes; hind femur only moderately swollen; elytron metallic green or blue; legs entirely metallic.

Length 26-30 mm.

Distribution: N. Vietnam, Laos, N. Thailand (Wiang Pa Pao).

Chelidonium Thomson, 1864

Hind femur reaching or exceeding elytral apex in female, often exceeding beyond them in male; prothorax about as broad as long, sometimes slightly broader, more or less tuberculate at side; antennal scape sub-rounded apically,

A55. ***Chelidonium buddleiae*** Gressitt & Rondon, 1970

ด้วงหนวดยาวทับราชวดี

Dorsum entirely metallic green or bluish-green; pronotum with a lateral tooth distinctly angulated and disc distinctly set off from collars, transversely raised at the base; antenna shorter than the elytra.

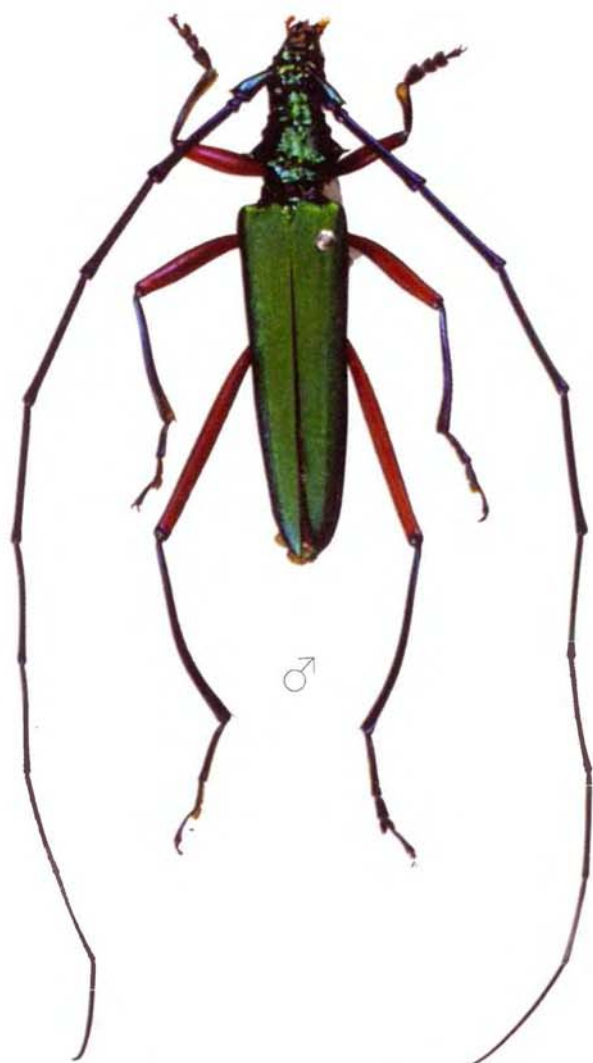
Length 20-28 mm.

Distribution: S. China, N. Thailand (Wiang Pa Pao).

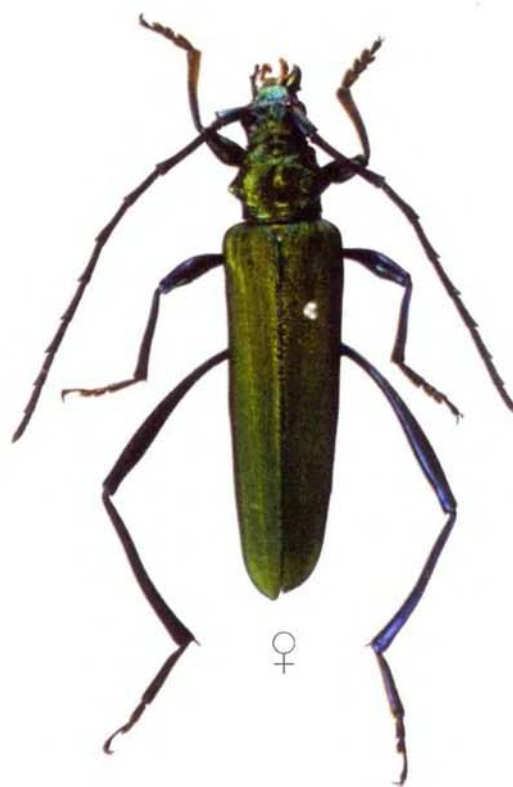
Host : *Buddleja officinalis* (Chinese plant).



(1.43 X)



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♀

A54. *Aprodium subplicatum*

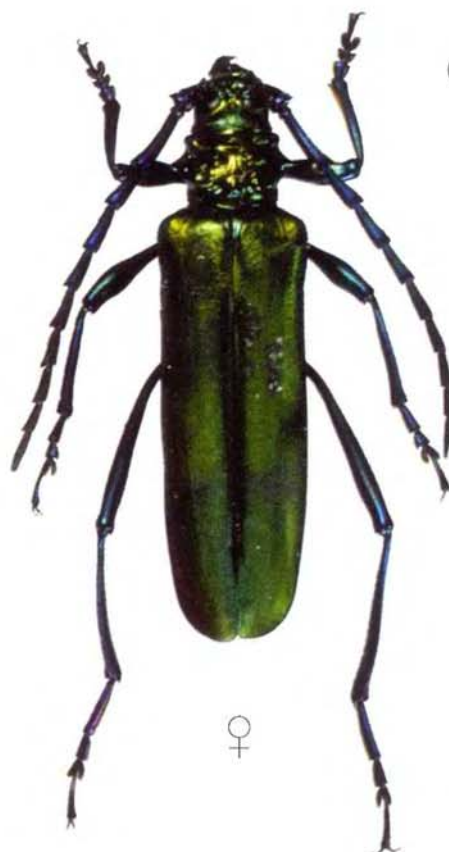
(1.77 X)



♀

A53. *Aprodium neoxenum*

(2.0 X)



♀

A55. *Chelidonium buddleiae*

A56. ***Chelidonium venereum*** Thomson, 1865

ด้วงหนวดยาวทับทองย่อย

Metallic bluish-green; pronotum strongly swollen behind the corner and with a tooth at side; elytra with a broad transverse band at behind the middle, extending farther posteriorly along the outer margins beyond the middle.

Length 19-28 mm.

Distribution: Cambodia, Laos, Thailand (Fang, Wiang Pa Pao).

Chloridolum Thomson, 1864

Antenna is very slender distally, distinctly longer than body in male; hind femur exceeding elytral apex; prothorax usually about as long as broad, sometimes longer, usually metallic green.

A57 ***Chloridolum alcmene*** Thomson, 1865

ด้วงหนวดยาวทับมะนาว

Elytron uniformly green, closely punctured except along suture which is transversely corrugated basally; pronotal entirely plicate, plications very regular and complete; antenna purplish-blue beyond scape; femora entirely black or bluish.

Length 15-30 mm.

Distribution: N.E. India, Myanmar, Laos, N. Thailand (Wiang Pa Pao).

Host : *Citrus* (ส้ม มะนาว).

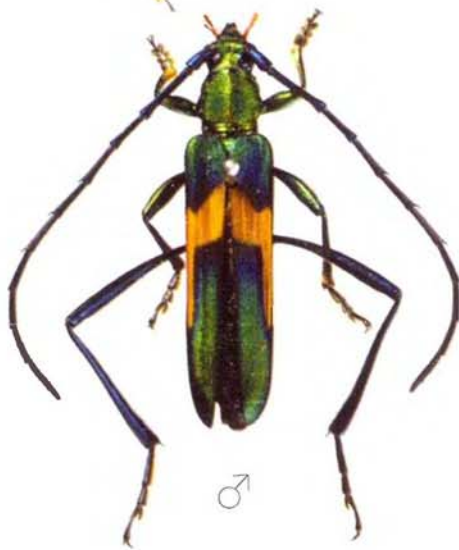
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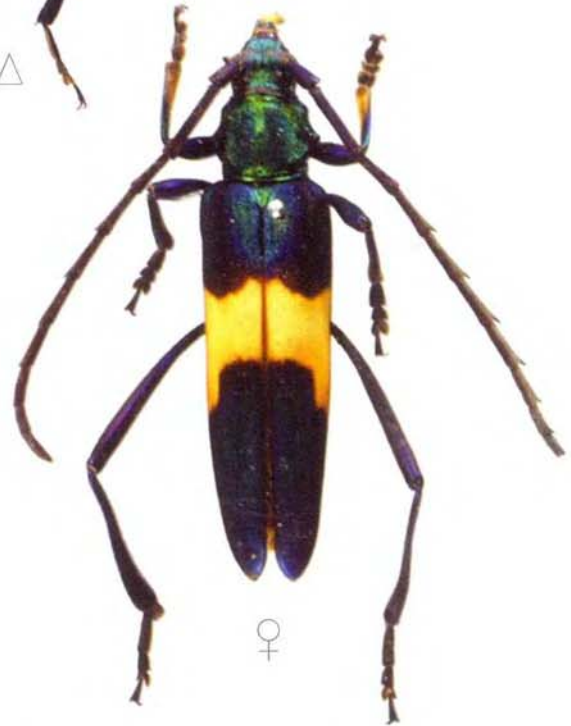
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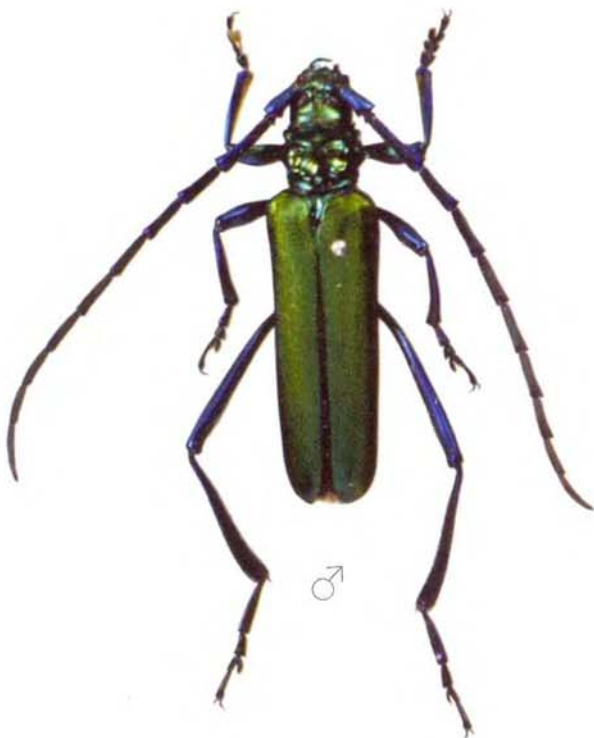
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♀

A56. *Chelidonium venereum*

(1.45 X)



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♂ Δ

A57. *Chloridolum alcmene*

A58. *Chloridolum laotium* Gressitt & Rondon, 1970

ด้วงหนวดยาวทึบลาว

Dark golden green, antenna purplish-blue, 2.5x as long as body in male, barely $\frac{1}{4}$ longer than body in female; legs blue to black, hind tibia with fringe of hairs on inner edge about $\frac{1}{5}$ as wide as tibia; pronotum with rugulose area somewhat vague, merging with plicate area, largely limited to area on each side of median line just behind center; scutellum green; elytron dark green with short bright sutural stripe.

Length 16-36 mm.

Distribution: Laos, N. Thailand (Wiang Pa Pao).

.....
Embrinkstrandia Plavilstshikov, 1931

Prothorax strongly tuberculate at side, with 4-5 swellings on disc; elytra narrowed posteriorly, covering most of all abdomen; hind femur not much shorter than abdomen.

.....
A59. *Embrinkstrandia bicolor* Gressitt & Rondon, 1970

ด้วงหนวดยาวจอกั้ง

Antennal segments 3-6 yellow; elytral yellow band moderately broad narrower at suture, not reaching end of basal $\frac{1}{2}$; pronotum rugulose-punctate, subgrabrous. It differs from the next species, *E. unifasciata*, in having elytral band narrower at suture and more closely approaching humerus, antenna with segments 3-6 pale instead of 5-11, body more slender.

Length 24 mm.

Distribution: Laos, N. Thailand.

.....
A60. *Embrinkstrandia unifasciata* (Ritsema, 1897)

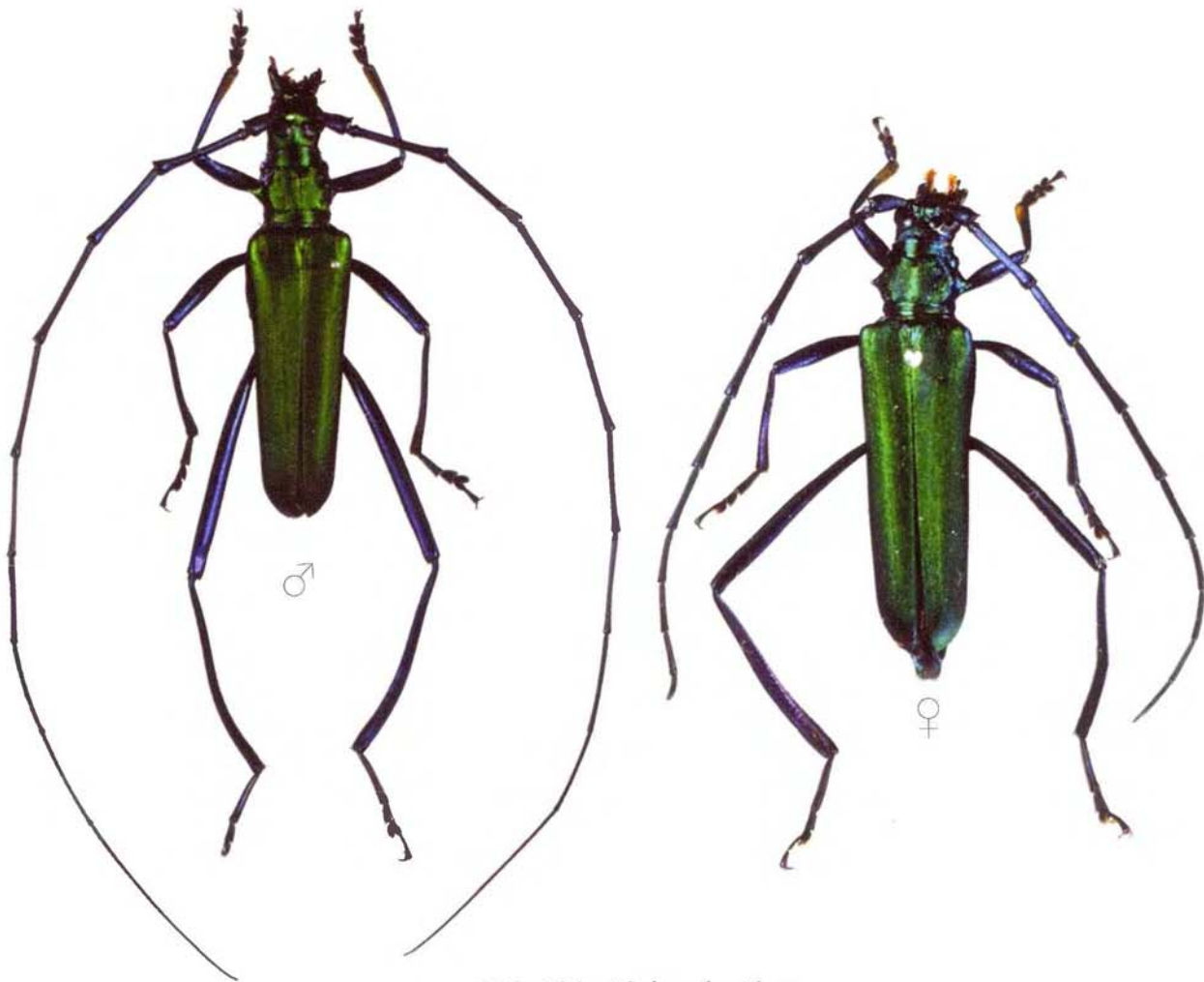
ด้วงหนวดยาวจอกขนาน

Antennal segments 4-11 yellow; dorsum black with bluish tinge; elytral band at middle reaching suture. Pronotum is reddish. Antennae are entirely reddish yellow.

Length 27 mm.

Distribution: Assam, Hainan, Vietnam, Laos, Thailand (Wiang Pa Pao).

(1.3 X)



A58. *Chloridolum laotium*

(1.8 X)



A59. *Embrinkstrandia bicolor*

A60. *Embrinkstrandia unifasciata*

Nothopeus (Pascoe, 1833)

Medium sized, generally resembling to some kinds of yellow wasps; body largely yellowish-brown, elytra rather short or narrow and covering abdomen partially, antennae shorter than elytra and usually angulated externally in the middle of segments; pronotum with a tooth at side.

A61. **Nothopeus drescheri** (Fisher, 1936)

ด้วงหนวดยาวปีกลดรูป

This species, body rather long and slender; elytra narrowed posteriorly, with three feeble costae, 1st and 2nd uniting behind the middle and joining the 3rd costa near apex of each elytron.

Length 38-40 mm.

Distribution: Java, Laos, Thailand (Wiang Pa Pao).

A62. **Nothopeus hemipterus** (Olivier, 1795)

ด้วงหนวดยาวปีกมน

Golden brown colored; elytra triangular shaped, very short, less than a half of their length, hind wings pale brownish-yellow, abdomen dark brown.

Length 32 mm.

Distribution: India, Myanmar, Laos, Indonesia, Thailand (Wiang Pa Pao).



(1.1 X)

A61. *Nothopeus drescheri*

(1.1 X)



A62. *Nothopeus hemipterus*

Pachyteria Serville, 1833

Head narrowed and elongated below; antenna often nearly as long as body in male; hind femur gradually swollen.

A63. ***Pachyteria dimidiata*** Westwood, 1848

ด้วงหนวดยาวปีกคู่

Black, except the antennal segments 6-11 and a broad patch across the elytra yellow; head small, with biting mouth parts fit for feeding on flowers; pronotum strongly toothed at sides; elytra smooth and slight shining.

Length 25-35 mm.

Distribution: India, N. Vietnam, Laos, Thailand (Bangkok).

A64. ***Pachyteria violaceothoracica*** Gressitt & Rondon, 1970

ด้วงหนวดยาวเหลืองออกม่วง

Antennae are entirely ochreous; pronotum and posterior 4/7 of elytron purplish black; antenna nearly as long as body in male.

Length 34 mm.

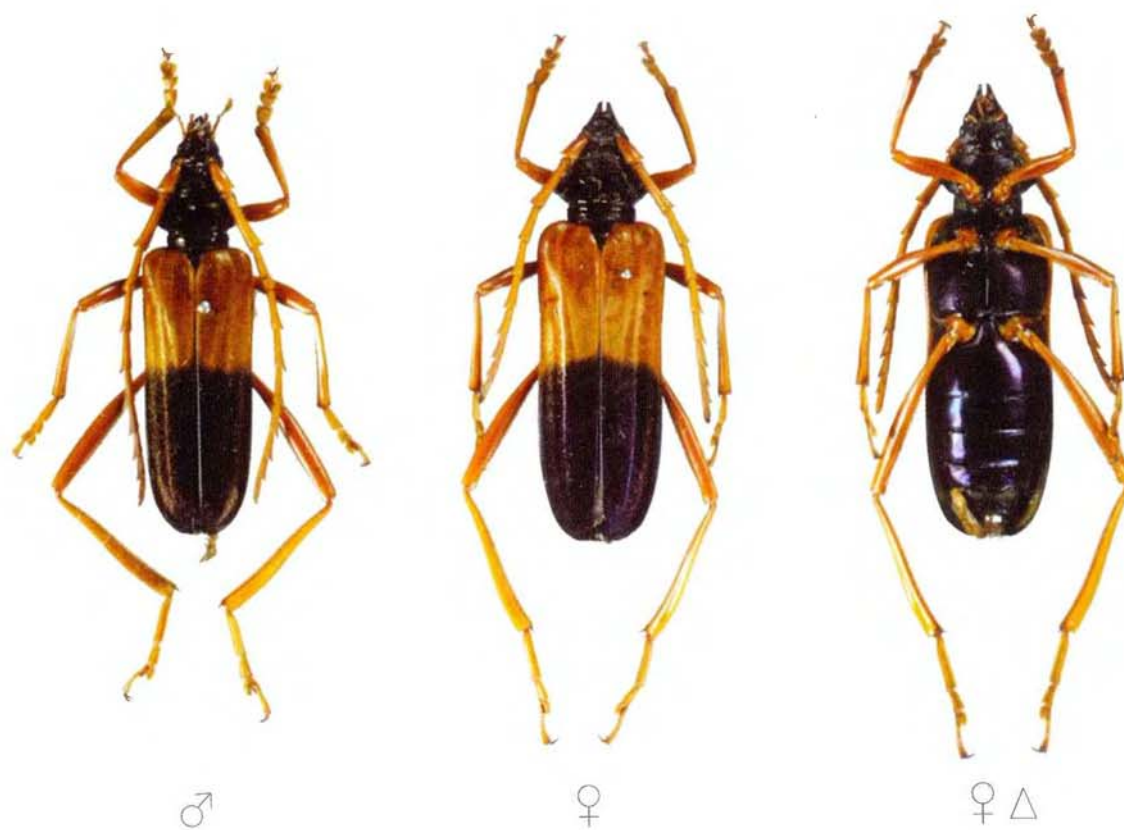
Distribution: Laos, N. Thailand (Wiang Pa Pao).

(1.2 X)



A63. *Pachyteria dimidiata*

(1.0 X)



A64. *Pachyteria violaceothoracica*

Polyzonus Castelnau, 1840

Small, long and slender body, metallic blue or green, with or without yellow markings upon elytra; prothorax more or less tuberculate at side, usually longer than broad, not grooved transversely at apex and base; elytral subparallel; body nearly 5x as long as broad; antenna rarely longer than body in male; hind femur generally not exceeding elytral apex.

A65. ***Polyzonus latemaculatus*** Gressitt & Rondon, 1970

ด้วงหนวดยาวเรียวพาดเหลือง

Dark blue to almost black, elytra cross by a large transverse yellow band, occurring middle ½ of each elytron; pronotum in large part finely striate.

Length 23 mm.

Distribution: Laos, N. Thailand (Wiang Pa Pao).

A66. ***Polyzonus nitidicollis*** Pic, 1932

ด้วงหนวดยาวเรียวจุดทึบเหลี่ยม

Bluish-green, pronotal striae largely transverse thorax tubercle distinct; elytron finely punctured at base except along suture, with 2 yellow bands usually reaching suture, anterior band usually narrower at outer margin.

Length 26-29 mm.

Distribution: Laos, N. Thailand (Fang, Wiang Pa Pao).

A67. ***Polyzonus obtusus*** Bates, 1906

ด้วงหนวดยาวเรียวสองแถบใหญ่

Pronotum weakly toothed at side, closely transverse grooved at the front margin, five to six grooves; elytra with two broad transverse yellow bands at the front half and behind half, the bands broader than the greenish-blue background.

Length 18-25 mm.

Distribution: Myanmar, Cambodia, Vietnam, Laos, Thailand (Doi Pui, Doi Pha Hom Pok).

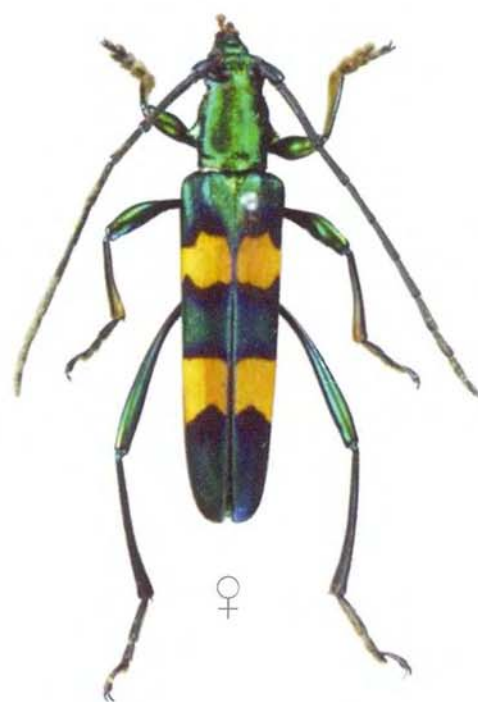
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♀



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♀

A65. *Polyzonus latemaculatus*

A66. *Polyzonus nitidicollis*



♂



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♀

A67. *Polyzonus obtusus*

A68. *Polyzonus pakxensius* Gressitt & Rondon, 1970

ด้วงหนวดยาวเรียวปากเขน

Metallic blue-green or green; pronotum minutely regose-punctulate, with a ridge parallel to apex and another parallel to the base; elytral with 2 yellow bands, anterior band broadened at suture.

Length 24 mm.

Distribution: Laos, N. Thailand (Wiang Pa Pao).

A69. *Polyzonus sinensis* (Hope, 1841)

ด้วงหนวดยาวเรียวไซเนนซิส

Distal antennal segments distinctly, though briefly, produced ecto-apically; body not very long, about almost 5x as long as broad; dorsum largely bluish-green or golden green; pronotum somewhat granulose-rugulose, striate at side, with moderate lateral tubercle.

Length 18-21 mm.

Distribution: Sikkim, Myanmar, S. China, Laos, N. Thailand.

A70. *Polyzonus subotusus* Pic, 1932

ด้วงหนวดยาวเรียวเหลื่องกลม

Golden green, prothorax moderately toothed at side, pronotal striae mostly transverse except on post-median portion; elytra with two yellow bands across the middle half and behind half, the yellow bands narrow than the green background, the anterior band not reaching the suture.

Length 19-20 mm.

Distribution: Vietnam, Laos, Thailand (Doi Pui).

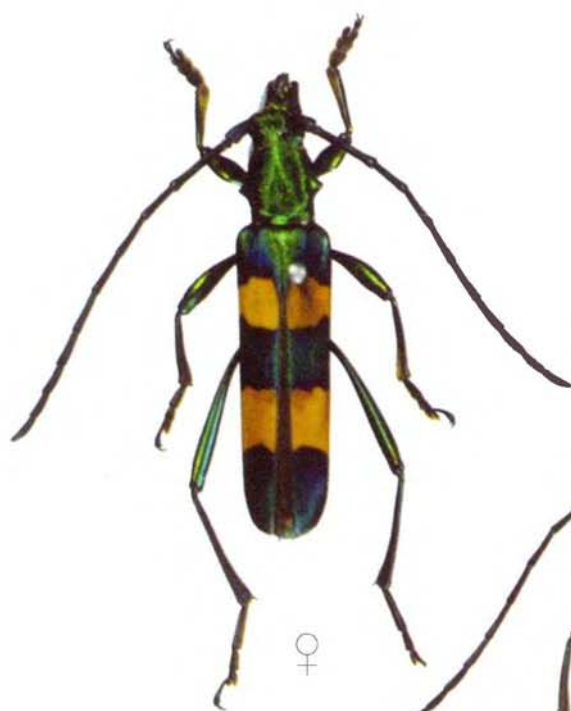
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A68. *Polyzonus pakxensis*

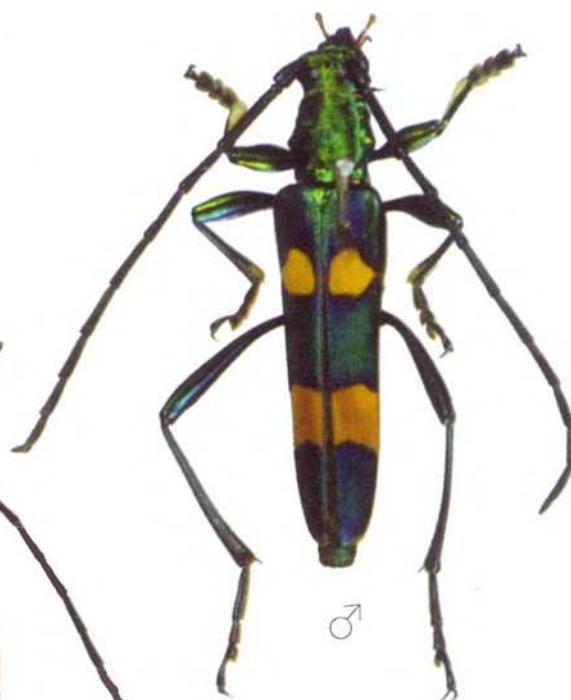
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A69. *Polyzonus sinensis*

♀



♀ △



♂

A70. *Polyzonus subotusus*

A71. *Polyzonus tetraspilotus* (Hope, 1835)

ด้วงหนวดยาวเรียวสี่จุด

Metallic green, elytron very finely punctured basally, anterior elytral band usually reduced to a large spot; posterior band narrow; pronotum partly sub-reticulate to sub-plicate on center.

Length 21-23 mm.

Distribution: N.E. India, Myanmar, Laos, N. Thailand (Wiang Pa Pao).

Host : *Acacia* (กระถินเทศ ชะอม ส้มป่อย).

.....
Zonopterus Hope, 1843

Prothorax is feebly swollen at side, behind the middle; hind femur much shorter than elytra; elytron entire, covering most or all of abdomen.

.....
A72. *Zonopterus flavitarsis* Hope, 1843

ด้วงหนวดยาวปลายเหลือง

Elytra black, sub-parallel-sided, with two broad transverse yellow bands at front half and at slight behind the middle; legs black, except tarsi yellow; antennae black, except the apical segment 5 onwards yellow.

Length 40-42 mm.

Distribution: Myanmar, Laos, Thailand (Doi Pha Hom Pok).



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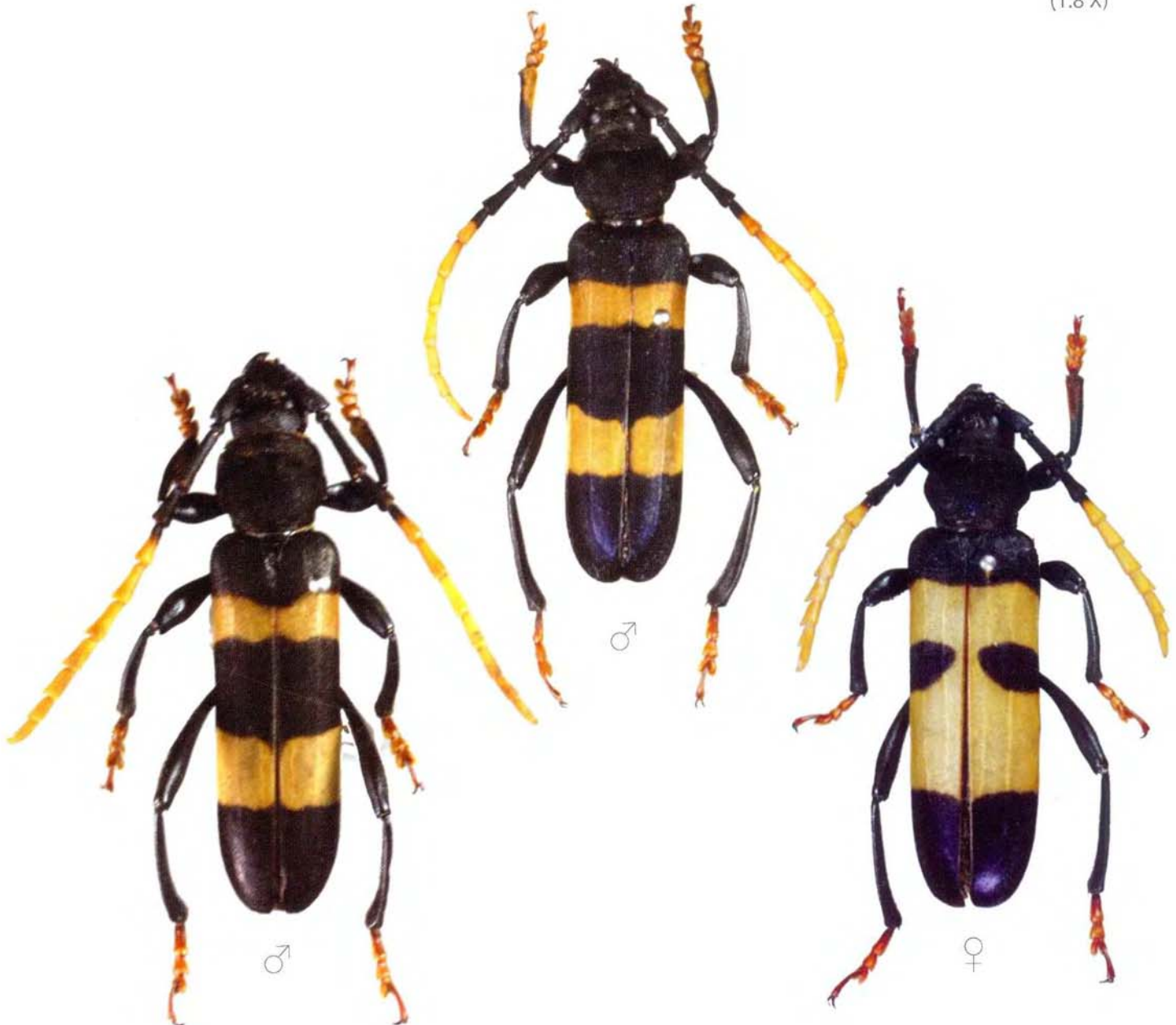


♀

(2.0 X)

A71. *Polyzonus tetraspilatus*

(1.8 X)



♂

♂

♀

A72. *Zonopterus flavitarsis*

Tribe Purpuricenini

Scutellum large, triangular, angulate posteriorly; meso-sternum with scent pore at posterior angle; fore coxal cavity widely open behind.

Eyryphagus Thomson, 1864

Head is broad and nearly flat between the antennal insertions; eyes separated above by most of width of head; dorsum generally dull, only in part slight shining.

A73. *Eyryphagus lundii* (Fabricius, 1792)

ด้วงหนวดยาวแดงหัวโต

Red body; pronotum broad, with a tooth at the middle of each side; elytra with a pair of black spots at near apices in female, but somewhat variable of this marking in male and maybe absent.

Length 23-31 mm.

Distribution: India, Myanmar, Laos, Thailand (Wiang Pa Pao).

Host : *Dipterocarpus* (พลวง ยางนา), *Hopea* (ตะเคียน), *Shorea* (เต็ง รัง सालะ พะยอม), *Sommeratia* (ลำพู).

Pavieia Brongniart, 1890

Head ridged in middle between antennal supports; antennal supports not projecting upwards; scutellum more than ½ as broad as long.

A74. *Pavieia superba* Brongniart, 1890

ด้วงหนวดยาวแถบส้มดำ

Black and orange species; head, antennae and legs black; pronotum bright orange, with strong transverse ridge behind the middle, strongly toothed at side; scutellum black; elytra strongly punctured, but somewhat shining, orange with three transverse black bands at base, the middle and apices.

Length 20-35 mm.

Distribution: Laos, Thailand (Wiang Pa Pao).

(2.4 X)



A73. *Eryphagus lundii*

(1.9 X)



A74. *Paveia superba*

Purpuricen Latreille, 1829

Antennal scape not broader than the second segment and the rests or acute apically; pronotum not swollen or swollen only on the median line near the base, body dorso-ventrally flattened.

A75. ***Purpuricen*** *malaccensis* (Lacrodaire, 1869)

ด้วงหนวดยาวอกหนามเสื่อ

Black, except the two broad yellow bands crossing the elytra at base and behind the middle; pronotum toothed at side; scutellum black; elytra subparallel-sided and rounded at apices.

Length 23 mm.

Distribution: India, Myanmar, Laos, Malaysia, Thailand (Doi Pha Hom Pok).

Tribe Pyrestini

Fore coxal cavity closed posteriorly; legs short, hind femur not reaching abdominal apex.

Erythr White, 1853

External elytral margin fairly straight; elytral disc pubescent; pronotum broaden basally.

A76. ***Erythr*** *championi* White, 1853

ด้วงหนวดยาวเสื่อแซมปี

Middle antennal segments are as broad as long; elytron entirely red, tooth at apex small, directed downward; pronotal tubercles moderate; pronotal stripe rarely reaching anterior margin.

Length 15-19 mm.

Distribution: S. China, Laos, N. Thailand (Doi Pha Hom Pok).

A77. ***Erythr*** *laticornis* Fairmaire, 1895

ด้วงหนวดยาวเสื่อคูลมแดง

Red with antennae and legs black; head narrow, antennal segments 5-10 serrate externally, the middle segments about a half as wide as long; pronotum with two black spots above; elytra nearly parallel-sided, narrow in front and broader behind, the sutural margin strongly raised pre-apically, elytral margin fringed with fine golden hairs.

Length 22-23 mm.

Distribution: N. Vietnam, Laos, Cambodia, Thailand (Wiang Pa Pao).

Pachylocer Hope, 1834

Antennal segments mostly subglobose; eyes more or less divided.

A78. ***Pachylocer*** *sulcatus* Brongniart, 1892

ด้วงหนวดยาวร่องลูกบิด

Brown to dark brown; pronotum swollen in the middle, weakly toothed at side, strongly rugose above; elytra with 4 raised costae on each elytron, the inner edge behind the scutellum very short and the out edge one also short; antennal segments rather spherical-shaped at each basal segment.

Length 21-28 mm.

Distribution: India, Myanmar, S. China, Laos, Thailand (Doi Pha Hom Pok).



(2.0 X)

A75. *Purpuricenus malaccensis*A77. *Erythrus laticornis*

(1.7 X)

A76. *Erythrus champioi*A78. *Pachylocerus sulcatus*

Tribe Rosalini

Eye emerginate, reniform; antenna inserted in emargination of eye.

***Rosalia* Serville, 1833**

Black, with pubescence orange-red above; antennae are about 2x as long as body in male, antennal segments mostly toothed internally; hind femur somewhat swollen pre-apically.

A79. *Rosalia decempunctata* (Westwood, 1848)

ด้วงหนวดยาวส้มจุด

Orange, with black markings: pronotum with two spots at the median line and one spot near the lateral margin of each side; scutellum black and shining; each elytron with 1, 2 or 3 (rarely none) small black spots at interval of the weak longitudinal stripes.

Length 16-24 mm.

Distribution: India, Laos, Java, Kalimantan, N. Thailand (Doi Pha Hom Pok).

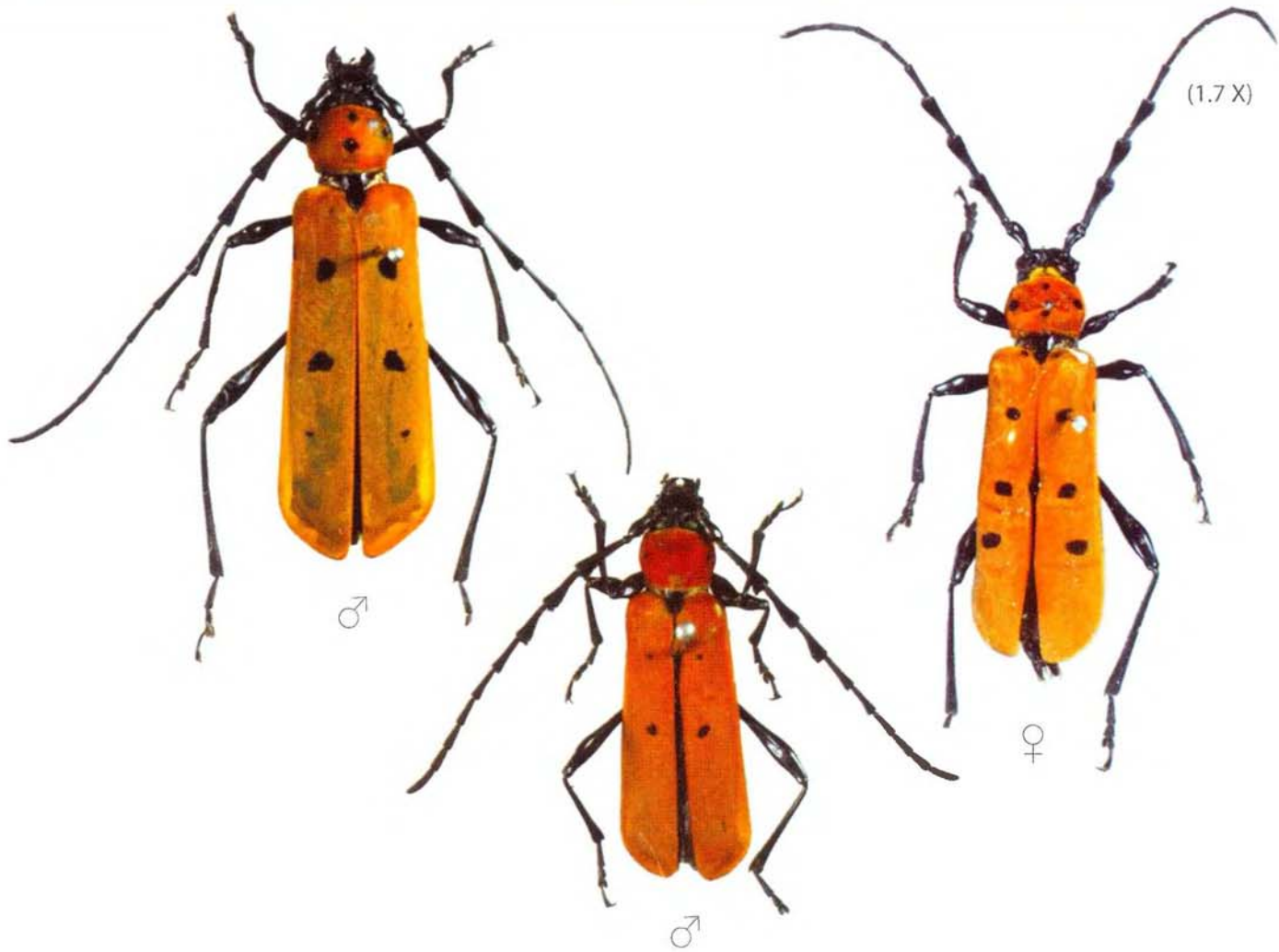
A80. *Rosalia formosa* (Saunders, 1839)

ด้วงหนวดยาวส้มคาด

Black, except some parts of pronotum and elytra orange-red; pronotum swollen in the middle, with a black spot at median line near the base; elytra with two broad transverse black bands at the base and the middle and with two moderately large spots in the middle of the front orange band of both sides.

Length 38-40 mm.

Distribution: India, Laos, Thailand (Wiang Pa Pao).

A79. *Rosalia decempunctata*

(1.4 X)

A80. *Rosalia Formosa*

A81. *Rosalia lameerei* Brongniart, 1890

ด้วงหนวดยาวปมฟ้า

Pubescence bluish-green, pronotum with a broad black spot at the middle front and a small spot at lateral margin; elytra with a pair of black spots at the shoulders, three transverse bands at the front half, just behind the middle and near apex; antennae with prominent clusters of black hairs, at the joint of segments 3-8; all femora swollen at the apical end, hind tibia with a cluster of black hairs at the apical end.

Length 28 mm.**Distribution:** S. China, Taiwan, Myanmar, Laos, Thailand (Wiang Pa Pao).**Tribe Clytini**

Body fairly deep, not strongly depressed dorso-ventrally; frons normal; metepimeron produced over angle of abdominal sternite 1, enclosing hind coxa externally; metepisternum wide.

Chlorophorus Chevrolat, 1863

Antennal insertions are very close, antenna normal, lacking spines at apices of segments, segment 3 not longer than 1; body usually not extremely slender.

A82. *Chlorophorus annularis* (Fabricius, 1787)

ด้วงหนวดยาวมดดวง

Small brown, clothed with pubescence yellow and with black markings as follows: an upside-down Y-shaped at middle of pronotum, elytra with an elongate basal lunule connecting with a branch of the outer end of postmedian band, which also extending forwardly along the suture, a pair of large spot near the apices.

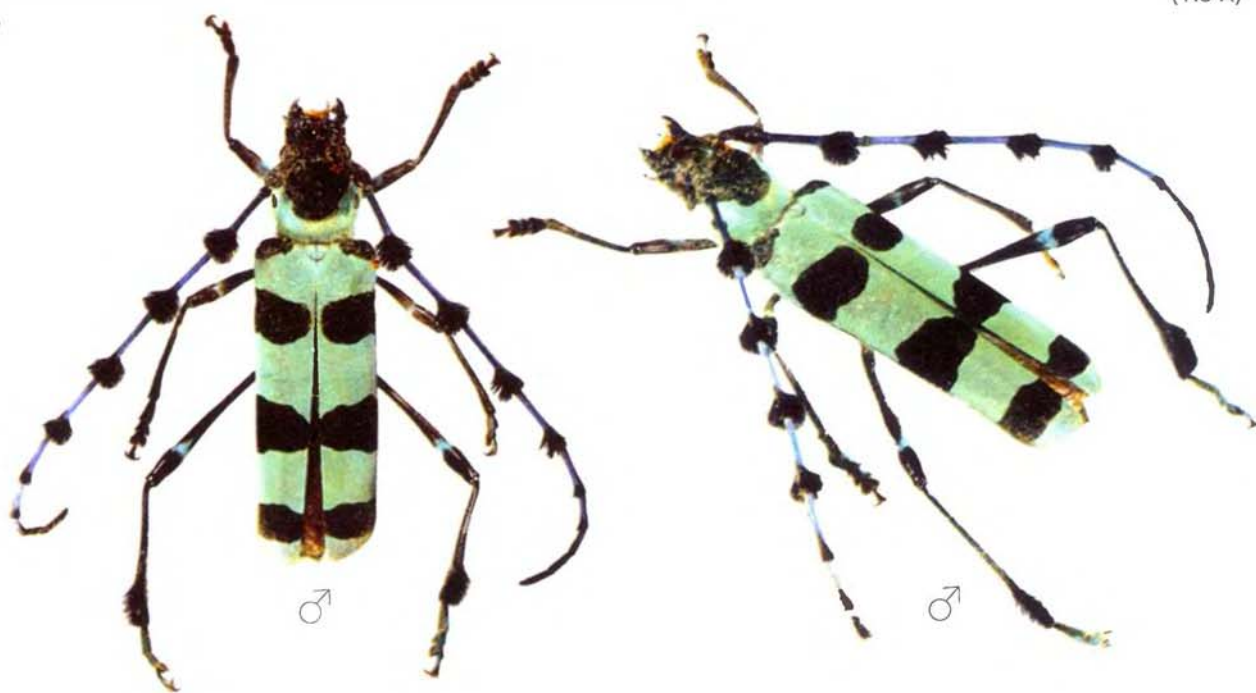
Length 13-16 mm.**Distribution:** Ceylon, India, Myanmar, Vietnam, China, Taiwan, Japan, Laos, Malaysia, Thailand (San Pa Tong, Mae Taeng, Mae Rim).**Host :** bamboo, *Shorea* (เต็ง รัง), *Tectona* (สัก), *Spodias* (มะกอกฝรั่ง), *Gossypium* (ฝ้าย), *Citrus* (ส้ม), *Pyrus* (สาหล้าจีน), *Vitis* (องุ่น), *Dipterocarpus* (ยางนา).A83. *Chlorophorus arciferus* (Chevrolat, 1863)

ด้วงหนวดยาวมดจุดหัวใจ

Spots at center of pronotum large and tend to separate posteriorly; elytral lunule fragmentary; band at middle of elytron very fine, barely reaching external to median line.

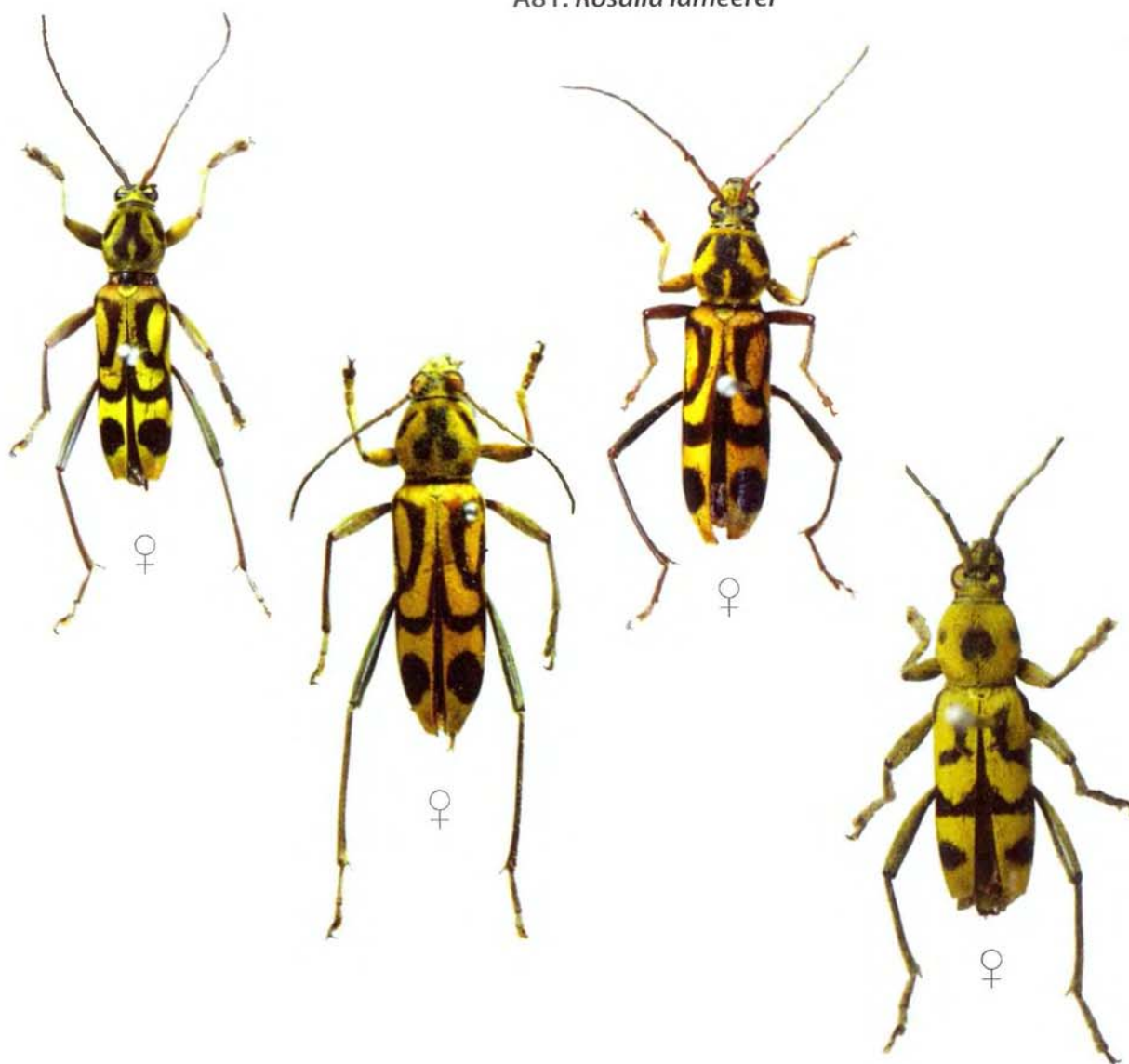
Length 16 mm.**Distribution:** N. India, Bhutan, Laos, N. Thailand (Khao Khlor, Wiang Pa Pao).

(1.8 X)



A81. *Rosalia lameerei*

(2.3 X)



A82. *Chlorophorus annularis*

A83. *Chlorophorus arciferus*

A84. *Chlorophorus rubricollis* (Castelnau & Gory, 1841)

ด้วงหนวดยาวมดสามสี

Antennal segment 1 longer than 2+3; pronotum bright red; elytron black with moderately narrow bands and spots of yellow pubescence: a spot near the shoulder, a band on the suture extending from behind scutellum and turning outwardly just after the end of basal half, a transverse postmedian band which broader in the middle than the margin, and a small apical band.

Length 13-17 mm.

Distribution: Myanmar, Laos, Thailand (Sai Yok).

A85. *Chlorophorus sappho* Gressitt & Rondon, 1970

ด้วงหนวดยาวมดลายใหญ่

Pronotum with median dark area bifurcating posteriorly, in shape of inverted Y or V; subbasal elytral lunule elongate, containing an oblique pale stripe; dorsal pubescence dull olive green; pronotal disc vermiculate.

Length 12 mm.

Distribution: Laos, N. Thailand (Wiang Pa Pao).

Clytosaurus Thomson, 1864

Body broad, somewhat flattened, antenna somewhat flattened, with distal segments angulate externally; segments 3-6 spines internally.

A86. *Clytosaurus siamensis* Jordan, 1894

ด้วงหนวดยาวเส้าเมือง

Black with yellow pubescence above elytra: a pair of rectangular-shaped at the basal half which interfering by a black X-shaped marking above the middle, and a pair of rectangular-shaped at behind the middle; pronotum slightly longer than its width and swollen at behind the middle.

Length 20-24 mm.

Distribution: Laos, Thailand (Wiang Pa Pao).

Demonax Thomson, 1860

Body slender; antenna slender, without fringed of long hairs on inner side, usually segments 3-4 or 5-6 spined or toothed internally.

A87. *Demonax albidofasciatus* Gressitt & Rondon, 1970

ด้วงหนวดยาวมดดำตัดขาว

Small black, with white markings; pronotum swollen near the base and marked with a short transverse band at base; elytron with a white stripe extending from behind scutellum and turning outwardly at two-thirds from the base to the lateral margin, a transverse band of the same color at behind the middle and a short transverse band at apex.

Length 14-15 mm.

Distribution: Laos, N. Thailand (San Pa Tong).

A84. *Chlorophorus rubricollis*

(2.2 X)



♀ ♂



(3.0 X)

♀

A85. *Chlorophorus Sappho*

(2.8 X)



♂

B86. *Clytosaurus siamensis*

♂



♂

B87. *Demonax albidofasciatus*

A88. *Demonax elongatus* Gressitt & Rondon, 1970

ด้วงหนวดยาวมดทรงกระบอง

Elytron black with narrow white or grayish-white bands, post-basal elytral band sub-angulate near suture with discal portion nearly transverse; postmedian band extending narrowly forward along suture; pronotum with a pair of small, widely separated black spots.

Length 10-15 mm.

Distribution: Laos, N. Thailand (Sai Yok).

A89. *Demonax gracilestriatus* Gressitt & Rondon, 1970

ด้วงหนวดยาวมดเส้นแห้ว

Pronotum with a partly sinuate pair of black stripes; elytral marks consisting of very narrow discal and humeral stripes on basal half or more. Differs from *D. literatus* in being slightly raised along each side of pronotal disc and slightly depressed instead of raised along the middle, in having dorsal markings much more slender.

Length 13-16 mm.

Distribution: Laos, N. Thailand.

A90. *Demonax literatus literatus* Gahan, 1894

ด้วงหนวดยาวมดตุ๊กตา

Antennal spines are shorter than apical widths of respective segments; pronotum with three narrow black spots somewhat raised, outer two and median one posterior; elytra with a long and acute V-mark basally, elytral V not reaching middle, apical band of a single spot.

Length 12-14 mm.

Distribution: Myanmar, Laos, N. Thailand (Wiang Pa Pao).

Host : *Diospyros* (ตะโก มะเกลือ), *Phyllanthus* (มะขามป้อม เสี้ยวใหญ่).

Perissus Chevrolat, 1863

Front of head without distinct carinae; antennae rather widely separated basally; first hind tarsal segment at least 2x as long as 2+3, hind femur usually extending beyond elytral apex.

A91. *Perissus mimicus* Gressitt & Rondon, 1970

ด้วงหนวดยาวมดดำเลียน

Black, tending to dark reddish brown on parts of legs; pronotum is longer than wide, swollen at sides, with a network of lines; elytron with pale spot beside scutellum, with very narrow subtransverse white bands at 1/3 from the base, middle and apex.

Length 9-13 mm.

Distribution: (Wiang Pa Pao).



♂

A88. *Demonax elongates*

(2.3 X)



♀

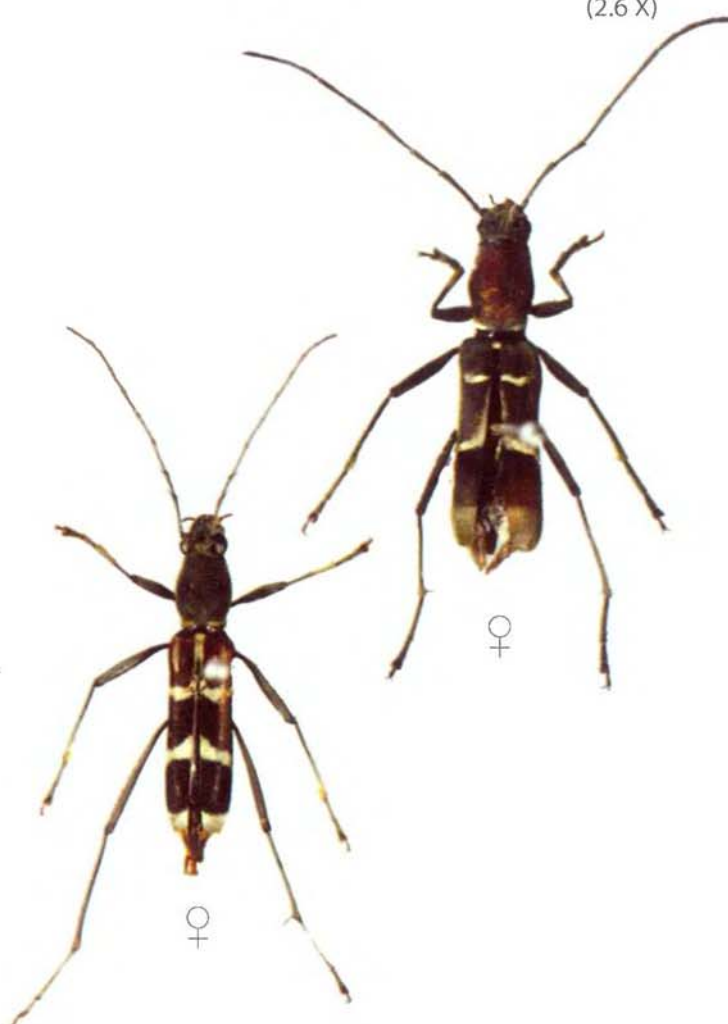
A89. *Demonax gracilestriatus*

(2.6 X)



♀

♀ △

A90. *Demonax literatus*

♀

♀

A91. *Perissus mimicus*

Rhaphuma Pascoe, 1858

Generally slender with yellow and olive pubescence; antenna normal, lacking spines at apices of segments, antenna rarely longer than body in male; metepisternum straight internally; hind tarsal segment 1 usually more than 2x as long as 2+3.

A92. ***Rhaphuma diana*** Gahan, 1906

ด้วงหนวดยาวมดเหลืองไคอานา

Pronotum with black markings fairly large, fused anteriorly; elytron with humeral stripe extending distinctly beyond end of discal stripe, these followed by 3 bands, 1st consisting of two short stripes connected posteriorly, 2nd and 3rd consisting of subrounded spots.

Length 11-15 mm.

Distribution: Myanmar, Laos, N. Thailand (Fang, Wiang Pa Pao).

A93. ***Rhaphuma horsfieldi*** (white, 1855)

ด้วงหนวดยาวมดเหลืองซีดขาว

It is rather small, yellow with black markings. Pronotum with discal stripes fairly narrow; elytron with two narrow discal stripes, meeting posteriorly well behind middle, followed by a narrow black band arching forward and then a pre-apical longitudinal black mark.

Length 10-12 mm.

Distribution: N. India, Myanmar, N. Vietnam, Laos, S.W. China, N. Thailand (Fang).

A94. ***Rhaphuma patkaiana*** Gahan, 1906

ด้วงหนวดยาวมดเหลืองซีดประ

Pronotum with black marks of moderate length, barely or hardly connected anteriorly; elytron with humeral stripe extending barely beyond discal stripe, these followed by two bands, 1st consisting of 2 short stripes, obliquely placed and connected anteriorly, 2nd narrow subarcuate-oblique, concave behind.

Length 11-15 mm.

Distribution: Thailand (Fang).

A95. ***Rhaphuma phiale*** Gahan, 1906

ด้วงหนวดยาวมดเหลืองจุดคู่

Pronotum with a pair of fairly small spots; basal elytral stripes terminating in a usually fairly broad transverse band; elytron with 3 bands behind that connecting subbasal stripes, 1st somewhat arcuate-oblique and nearly divided, 2nd oblique-oval, 3rd subrounded and smaller.

Length 9-13 mm.

Distribution: Thailand (Wiang Pa Pao).

A96. ***Rhaphuma quadrimaculata*** Pic, 1923

ด้วงหนวดยาวมดเหลืองสี่จุด

Pronotum with four distinct black spots forming a square, without lateral spot; elytron with only 2 black bands beyond connected ends of discal stripes.

Length 12-14 mm.

Distribution: Laos, N. Thailand (Fang, Wiang Pa Pao).

(3.2 X)



♀

A92. *Rhaphuma diana*

♂

A93. *Rhaphuma horsfieldi*

♀

A94. *Rhaphuma patkaiana*

(2.3 X)



♂

A95. *Rhaphuma phiale*

♀

A96. *Rhaphuma quadrimaculata*

♀



Sclethrus Newmann, 1842

Antennal segment 3 much longer than 1; body extremely slender.

A97. ***Sclethrus amoenus*** (Gory, 1833)

ด้วงหนวดยาวมดดำขาแดง

Black with bluish white markings above, legs are long, reddish. Pronotum with to pairs of small spots at base and before anterior margin; elytron with a transverse band just behind the middle and extending along the suture upwards, another transverse band before the apex and a spot at $\frac{1}{4}$ from the base in the middle.

Length 15-19 mm.

Distribution: Hainan, N. Vietnam, Laos, Singapore, Sumatra, Kalimantan, Philippines, Thailand (Wiang Pa Pao).

Xylotrechus Chevrolat, 1860

Antennae rather widely separated basally, antennal supports hardly raised; front of head with one or more vertical or branching carinae, side of frons more or less carinate.

A98. ***Xylotrechus chinensis*** (Chevrolat, 1852)

ด้วงหนวดยาวต่อจีน

Pronotum densely yellow-pubescent, with a narrow transverse band of brown, widely at the center; elytron with base broadly black, with 3 broad sulphur-yellow bands, 1st oblique, 2nd oblique anteriorly, 3rd vaguely defined posteriorly, the portion near apex with a weak and incomplete brown band.

Length 27-28 mm.

Distribution: Laos, N. Thailand (Wiang Pa Pao).

A99. ***Xylotrechus magnificus*** Pic, 1922

ด้วงหนวดยาวต่อหลังจาง

Pronotum is broader than long, densely yellow pubescent at base and obliquely to the sides from middle of the base. Scutellum is yellow. Elytron is back with yellow at $\frac{1}{3}$ to apex, a narrow transverse black at apical $\frac{2}{3}$ from the base and a moderate oblique band at the middle.

Length 19 mm.

Distribution: N. Thailand (Wiang Pa Pao).

(1.5 X)



A97. *Sclethrus amoenus*



A98. *Xylotrechus chinensis*

(1.6 X)



A99. *Xylotrechus maginiscus*

A100. *Xylotrechus unicarinatus* Pic, 1917

ด้วงหนวดยาวต่อสามสี

Small brownish-black, with pubescence yellow and black above the dorsum; antennae very short. Pronotum is slightly longer than broad, black, with two pairs of yellow spots at middle and lateral sides, yellow bands at base and the front margin. Elytra bear a broad black patch across the middle, interfering by four transverse yellow bands of each elytron, the front band turning upwards along the suture, the second band triangular shaped, in the middle and the rests rather narrow, straight behind the middle.

Length 18 mm.**Distribution:** N. Vietnam, Laos, Thailand (Wiang Pa Pao).**Tribe Cleomenini**

Eye lateral not extending on to frons; antenna usually shorter than body, sometimes serrate.

Clomenes Thomson, 1864

Prothorax more or less cylindrical; elytron parallel-sided, serially punctured, ridged and biacuminate apically; hind femur not reaching apex of elytron.

A101. *Clomenes nigricollis* Fairmaire, 1895

ด้วงหนวดยาวต่อดำ

Elytron without discal stripe, ochraceous with pitchy marks forming narrow basal and postmedian bands, narrow sutural stripe and 3 lateral marks besides band; pronotum with golden pubescence except for 3 black areas, sometimes merging forming only two black areas.

Length 8-13 mm.**Distribution:** N. Vietnam, Laos, N. Thailand (Wiang Pa Pao).**Nida** Pascoe, 1867

Antenna long and slender, segment 3 longer than 1 or 4; abdominal segment 1 shorter than 2+3.

A102. *Nida flavovittata* Pascoe, 1867

ด้วงหนวดยาวต่อนิดา

Elytral with a pale discal stripe of testaceous; femora black.

Length 9-14 mm.**Distribution:** Myanmar, S.W. China, Laos, N. Thailand (Phu Khieo, Wiang Pa Pao).



(2.0 X)



♀

(2.2 X)



♂



♀

A101. *Clomenes nigricollis*

(3.0 X)



♀ △



♀



♀



♂

A100. *Xylotrechus unicarinatus*A102. *Nida flavovittata*

FAMILY CERAMBYCIDAE

SUBFAMILY LAMIINAE

Tarsi with segment 3 dilated and 4 minute, often hidden; antenna surpassing prothorax; head vertical in front; genal margin directed posteriorly; fore tibia with mesial sinus; mid tibia notched or grooved externally; last maxillary palpal segment acute.

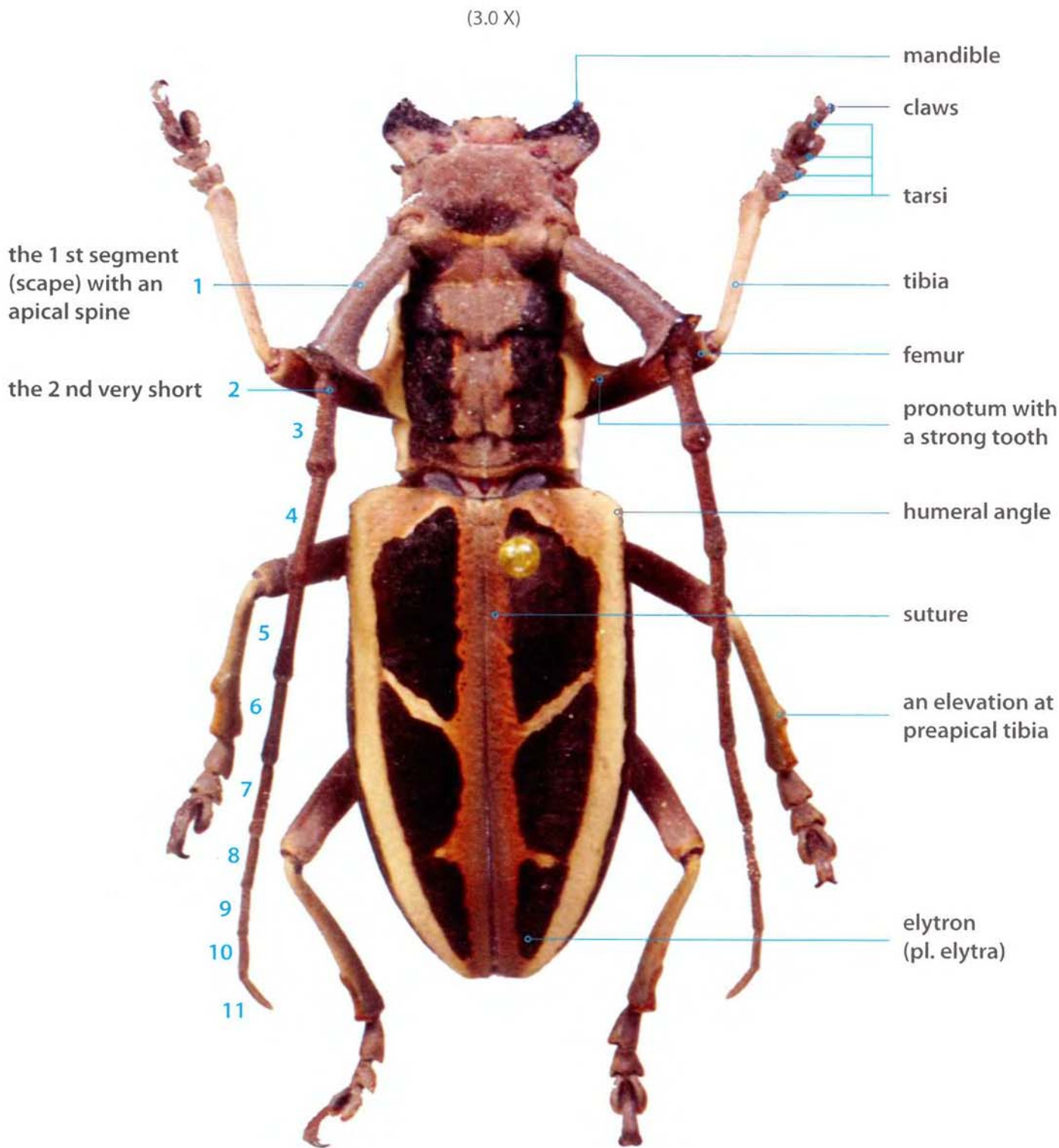


Figure 54. Long-horned beetle, *Stratioceros princes*. Dorsal view showing external characteristics.



Figure 55. Long-horned beetles, 1-2. *Loesse sanguinolenta*, 3. *Arctolamia fasciata* both species from Wiang Pa Pao.

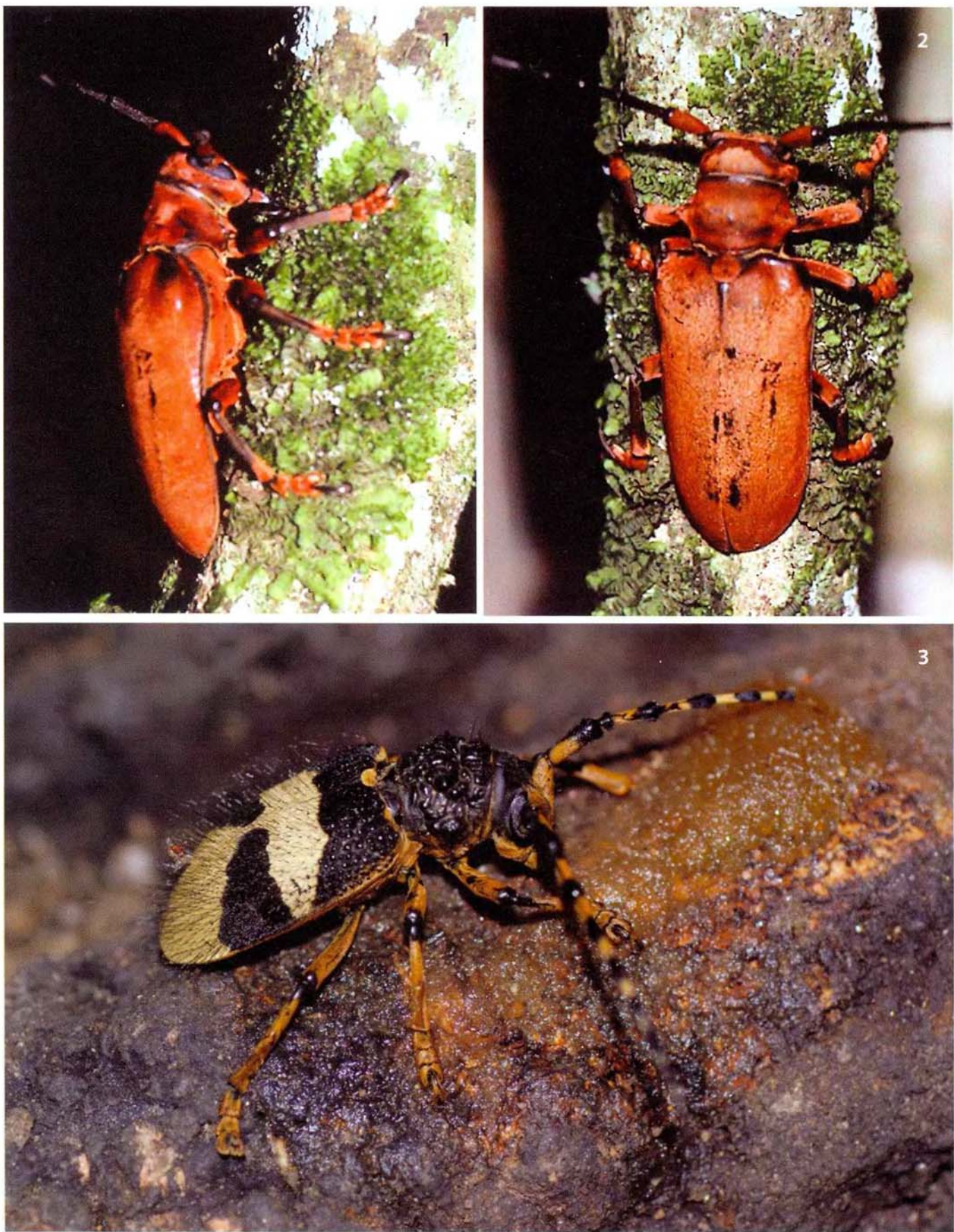


Figure 56. Long-horned beetles, 1-2. *Loesse sanguinolenta*, 3. *Arctolamia fasciata* both species from Wiang Pa Pao.



Figure 57. Long-horned beetles, 1. *Batocera numitor ferruginea*, male, with 6 or more orange spots on each elytron, 2. *Euryphagus lundii*, male on longan fruit.

Tribe Mesosini

Antennal scape long and broadest at apex, with a scar near the base.

Agelasta Newmann, 1842

A103. ***Agelasta birmanica*** (Breuning, 1935)

ด้วงหนวดยาวผิวปมพม่า

Pale brown marked with dirty black, head bear a narrow median groove and a dark stripe at both sides of the groove. Pronotum rough surface, marked with mottled black spots, rounded at sides, slightly narrower at fron margin than the base. Elytra marked with dark mottled, slightly raised spots, heavily at basal 1/3 and just behind the middle.

Length 20-23 mm.

Distribution: Myanmar, Laos, N. Vietnam, Thailand (Doi Pha Hom Pok).

Coptops Serville, 1835

A104. ***Coptops annulipes*** Gahan, 1864

ด้วงหนวดยาวเปลือกไม้ขาว

Brown, dark brown with black, white and pinkish markings

Elytron with an irregular transverse white band at middle, turning upwards to meet the suture at about 1/3 from the base, another band at base from scutellum to the shoulders.

Length 11-24 mm.

Distribution: Laos, Vietnam, Thailand (Loei, Wiang Pa Pao).

Golsinda Thomson, 1860

A105. ***Golsinda basicornis*** Gahan, 1894

ด้วงหนวดยาวจุดเลี่ยนหน้า

Dark brown to nearly black with spots of pubescence brownish above and the at the lower part, elytral spots at the apical half forming as a man face-shaped, the apical margin rounded; antennae dark brown with pubescence white at the basal of segments 3 onwards, segments 1-4 usually fringed with hairs beneath, segment 1 as long as segment 3.

Length 21 mm.

Distribution: N. Vietnam, Laos, Thailand (Doi Pah Hom Pok).

Mesosa Latreille, 1829

A106. ***Mesosa nigrpfasciaticollis*** Breuning, 1968

ด้วงหนวดยาวเปลือกไม้หยัก

Dirty brown, with pubescence gray, antennae dark brown, whitish at each basal segment; legs and above the body, head and pronotum with a darker longitudinal stripe at each side; pronotum broader than long, without tooth at sides; elytra broadly dark brown at basal 2/5, paler at humeral angles and behind the middle towards apices, with a prominent dark M-shaped marking at behind the middle of each elytron.

Length 15-18 mm.

Distributioin : Laos, Thailand (Nakhon Nayok).

(2.1 X)



♀



♀

A103. *Agelasta birmanica*

♀



♂

A105. *Golsinda basicornis*

♂

A104. *Coptops annulipes*

♂

A106. *Mesosa nigrpfasciaticollis*

Tribe Xylorhizini

Front coxal strongly raised; antennal scape usually fringed with short brownish hairs.

Thylactus Pascoe, 1866

A107. ***Thylactus simulans*** Gahan, 1890

ด้วงหนวดยาวเปลือกไม้ต่าง

The whole body clothed with fine hairs of various colors, creamy, brown to black; antenna slightly angulate at the apical end of the middle segments; elytra creamy colored except dark brown near the base and a short transverse band of half dark brown and half creamy colored at behind the middle of each elytron.

Length 32-34 mm.

Distribution: India, N. Vietnam, Laos, Thailand (Wiang Pa Pao, Chiang Dao).

Xylorhiza Castenau, 1840

A108. ***Xylorhiza adusta*** (Wiedmann, 1819)

ด้วงหนวดยาวลายเปลือกไม้

Elongate body, creamy-brown to dark brown, antennae shorter than the elytra, pronotum broadest in the middle, without toothed at sides, dark brown with creamy stripes at lateral margins and at median; elytra broad at base and darker colored than other parts, marginated and with three raised longitudinal stripes of each elytron, the ground colored like dried bark of the trees.

Length 30-55 mm.

Distribution: India, Sri Lanka, China, Taiwan, Indonesia, Malaysia, Laos, Thailand (Wiang Pa Pao).

Host : *Wrighttia tinctoria* (โมก).

(1.6 X)

A107. *Thylactus simulans*

(1.4 X)

A108. *Xylorhiza adusta*

Tribe Apomecynini

Front coxal cavity slightly raised; antennal scape usually clothed with pubescence brownish.

Apomecyna Dejean, 1821

A109. ***Apomecyna saltator niveosparsa*** Fairmaire, 1895

ด้วงหนวดยาวผิวจันทร์

Small black, strongly punctured above, the punctures on elytra rather large and arranging in longitudinal lines, elytron clothed with pubescence brown and two densely spotted areas of pubescence white at apical half and posterior half of the lateral margins.

Length 14 mm.

Distribution: N. Vietnam, Laos, Thailand (Phu Kae).

Pemptolasius Gahan, 1890

A110. ***Pemptolasius humeralis*** Gahan, 1890

ด้วงหนวดยาวไหล่ดำ

Antennal segment 5 finged with long black hairs. Pronotum is longer than wide, with longitudinal stripes at middle and near the laral margins. Elytra bear a prominent black raise area at humeral angle of each elytron.

Length 11-15 mm.

Distribution: N. Vietnam, Laos, Thailand (Kanchanaburi).

Tribe Agapanthiini

Antannal scape uniformly broad, broader and longer than segment 3; middle tibia with a strong depression, usually with an elevation nearby as beyond.

Attenohyllisia Breuning, 1963

A111. ***Attenohyllisia rondoni*** Breuning, 1963

ด้วงหนวดยาวเล็กหนวดขน

Small, slim body, pale brown with dark brown markings. Antennal segment 1 long with pubescence brown, segments 2 onwards narrower and fringed with long hairs. Head and pronotum long with dark longitudinal stripes at middle and the middle of both sides. Eltra are long and pointed at apicies, marked with a broad dark longitudinal stripe at the middle of each elytron.

Length 8-12 mm.

Distribution: Laos, Thailand (Sai Yok).



♀



♀ △

(3.7 X)

A109. *Apomecyna saltator niveosparsa*

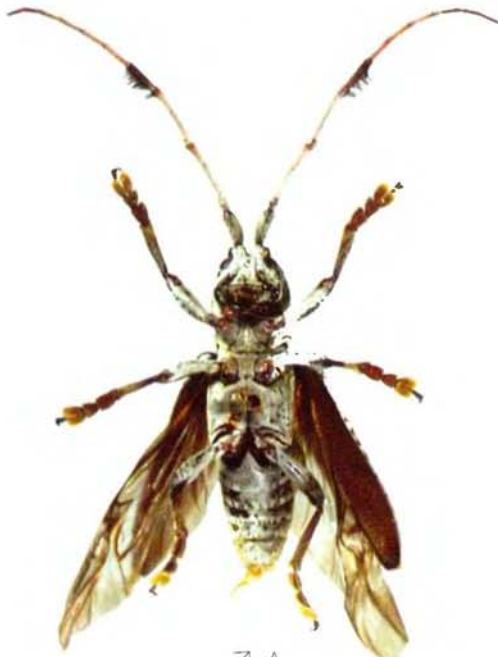
(2.5 X)



♂



♂



♂ △



♂ △

A110. *Pemptolasius humeralis*A111. *Attenohyllisia rondoni*

Eucomatocera White, 1846A112. ***Eucomatocera vittata*** White, 1846

ด้วงหนวดยาวปลายแปรง

Small, slender body, hairy antennae and with a small cluster of long black hairs at the tips; pronotum dark brown with a pair of longitudinal white stripe at both sides; elytra with also longitudinal white stripes at the suture and near the lateral margins.

Length 13 mm.**Distribution:** India, Ceylon, Myanmar, Vietnam, Laos, N. Thailand (Samoeng).A113. ***Pothyne variegata*** Thomson, 1864

ด้วงหนวดยาวข้อหนวดขาว

Body is elongate, gray with black spots and marked with reddish orange around the eyes, at median of head and pronotum, at both sides of scutellum, along the sutures and some broken longitudinal stripes on elytra. Antennae are black with basal segments 4-10 broadly white.

Length 14-24 mm.**Distribution:** Laos, N. Thailand (Wiang Pa Pao, Chiang Dao).**Tribe Pteropliini**

Antennal scape without any scar near the base; middle tibia normal, without a strong depression at beyond the middle externally.

Alidus Gahan, 1893A114. ***Alidus biplagiatus*** Gahan, 1893

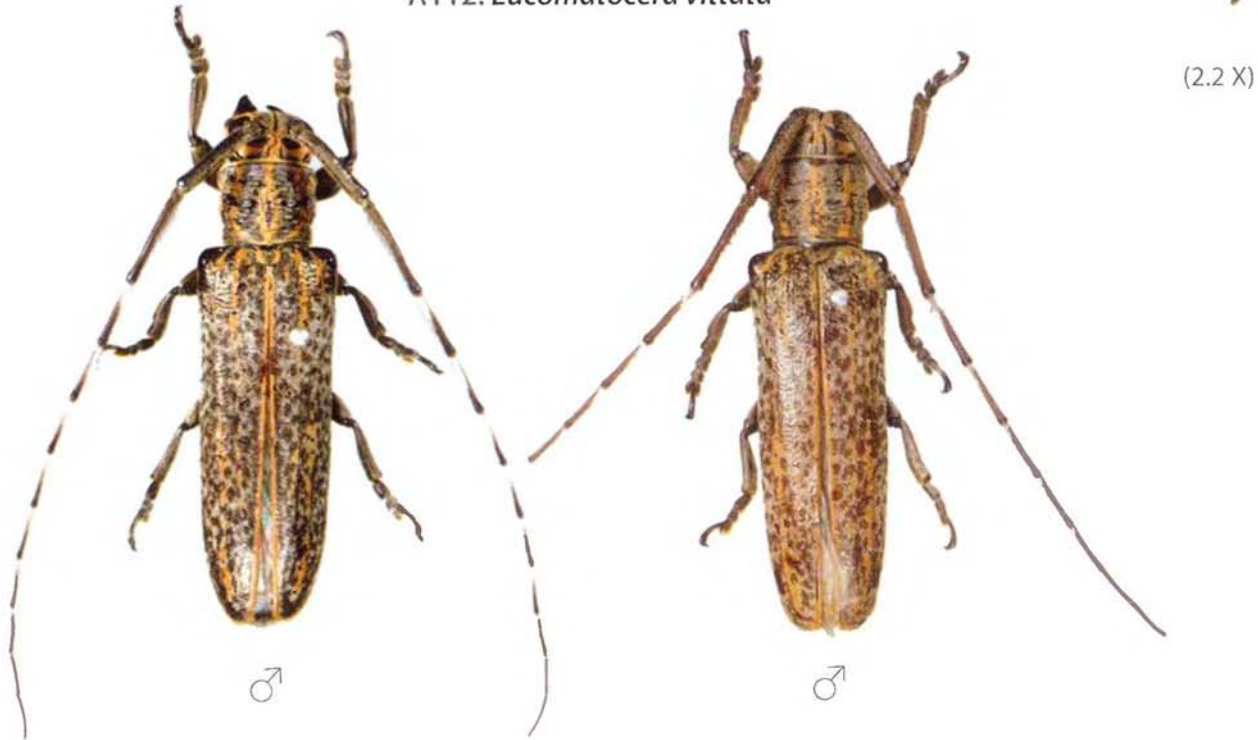
ด้วงหนวดยาวอกวงดำ

Pronotum dark brown with mottled black and a pair of large prominent black-oval spot at lateral margin, bordered by narrow white; elytra the same dirty colors with raised spots near the base and two irregular creamy patches across the middle and behind the middle to apex.

Length 14-26 mm.**Distribution:** Laos, Thailand (Doi Pui).



A112. *Eucomatocera vittata*



A113. *Pothyne variegata*



A114. *Alidus biplagiatus*

A115. *Misphila curvilinea* Pascoe, 1869

ด้วงหนวดยาวปีกเสี้ยววง

Grayish-brown marked with black; pronotum rounded and swollen in the middle, with a small median stripe and two broad lateral stripes of pubescence grayish-brown; elytra black with two broad semicircular-curved bands of pubescence greyish-brown at base extending from one side of humeral angle to the other, curving downwards to almost the middle, with longitudinal pale stripes at base inside the curves and near apices.

Length 18-20 mm.

Distribution: Cambodia, Vietnam, Laos, Thailand (Doi Pah Hom Pok, Doi Pui, Khao Yai).

.....
Niphona Mulsant, 1839

Pronotum with a moderately raised margin at base

.....
A116. *Niphona falaizei* Breuning, 1962

ด้วงหนวดยาวจุดข้างขาว

Small pinkish-brown with mottled black and white markings, very rough surface; pronotum almost square, strongly sculptured surface and with a median carina; elytra with a broad transverse-black patch at before the middle of each elytron with a semicircular-white spot in side the patch at the lateral margin.

Length 20-22 mm.

Distribution: Laos, Thailand (Wiang Pa Pao).

(2.3 X)



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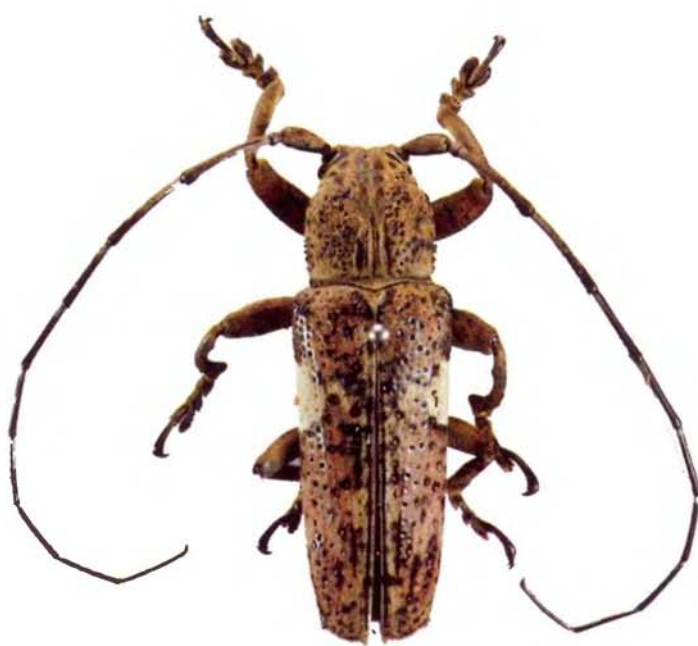


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♀

A115. *Misphila curvilinear*



♂



♀

A116. *Niphona falaizea*

A117. *Niphona longesignata* Pic, 1936

ด้วงหนวดยาวปีกนูนหลังก

Body elongate, broadest at the shoulder and slim at the end, brownish gray clothed with pubescen brown, a large X-shaped at almost the middle of elytra, extending from the lateral margin to apex of each elytron, the inner edge of the latter obliquely meet the suture just before apex. There is a small raised area with long brown hairs at basal $\frac{1}{4}$ of each elytron.

Length 27-35 mm.

Distribution: N. Vietnam, Laos, Thailand (Wiang Pa Pao).

A118. *Niphona rondoni* Breuning, 1962

ด้วงหนวดยาวปีกนูนหลังลายขาว

Small gray, with complex colors of pubescence, black, reddish brown and white throughout the dorsum. Elytra bear raised area at basal $\frac{1}{4}$ of each elytron, with long brown hairs and clothed densely with fine hairs near the shoulders, surrounding by paler gray, the apical half of elytron darker gray with a pale gray band in the middle.

Length 20 mm.

Distribution: Laos, Thailand (Loei, Phu Khieo, Doi Pui, Sai Yok).

(1.9 X)



(2.6 X)

A117. *Niphona longesignata*



A118. *Niphona rondoni*

Pterolophia Newmann, 1842

A119. ***Pterolophia zebrina*** (Pascoe, 1858)

ด้วงหนวดยาวคอมีลายเล็ก

Small gray and black species, head and pronotum with three white longitudinal stripes above. Elytra gray with black markings, a series of square-spots lining along the suture and some irregular black markings above.

Length 11-16 mm.

Distribution: Laos, Thailand (Phu Khieo, Doi Pui).

Sthenias (Castenau, 1787)

A120. ***Sthenias pascoei*** Ritsema, 1888

ด้วงหนวดยาวอานขาว

Elongate and rather thick body, very convex above, brownish-gray and black; antennal segment 3 longer than 4; head and pronotum with two longitudinal stripes of pubescence brown at both sides of the median line; elytra with black raised spots near the base, bearing a saddle-shaped patch of pubescence creamy at behind the middle, the posterior border of this patch sub-rounded, with black rather short longitudinal stripes.

Length 20 mm.

Distribution: Indonesia, Malaysia, Laos, Thailand (Phu Kae, Khao Yai).

Tribe Morimopsini

B121. ***Lamiodorcadion laosense*** Breuning, 1968

ด้วงหนวดยาวหลังปมลาว

Small entirely black, with pubescence gray on antennae, legs and body, very rough surface, with irregular raised spots throughout. Pronotum bears a strong tooth at side. Elytra bears at least two longitudinal rows of raised spots.

Length 17 mm.

Distribution: Laos, Thailand (Phu Kae, Khao Yai).

Tribe Agniini

Antennal scape usually with a scar; pronotum broader than long.

Acalolepta Pascoe, 1858

A122. ***Acalolepta pseudospeciosa*** Breuning, 1964

ด้วงหนวดยาวลายหลังต่าง

Black with iridescence gray, pale brown above the elytra. Head and thorax are much smaller than the elytra, pronotum with a small sharp tooth at side. Elytra are strongly punctured at base, with iridescence gray throughout.

Length 14-30 mm.

Distribution: Laos, Vietnam, Thailand (Khao Yai).

A119. *Pterolophia zebrina*A121. *Lamiodorcadion laosense*

(1.8 X)

A120. *Sthenias pascoei*A122. *Acalolepta pseudospeciosa*

A123. *Acalolepta sericeipennis* Breuning, 1964

ด้วงหนวดยาวลายหลังเหลือง

Brown with pubescence gray; antennae are very long more than 2x as long as the body length in male. Pronotum with a strong tooth at side. Elytra smooth, unpunctured at base, with iridescence gray throughout.

Length 23-24 mm.

Distribution: Laos, Thailand (Wiang Pa Pao).

Anamera Thomson, 1864

A124. *Anamera alboguttata* Thomson, 1864

ด้วงหนวดยาวม้าเล็กธรรมดา

Small black, with white spots on elytra. Pronotum bears a sharply pointed tooth at side. Elytra are strongly granulated at base.

Length 11-15 mm.

Distribution: Laos, Thailand (Wiang Pa Pao).

A125. *Anamera harmandi* Pic, 1936

ด้วงหนวดยาวม้าเล็กจุดใหญ่

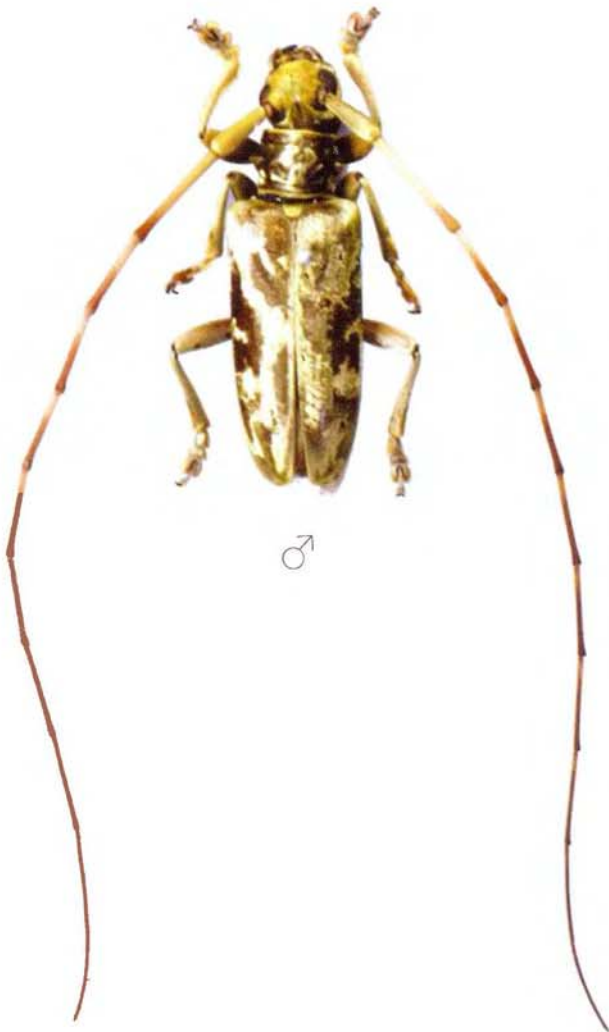
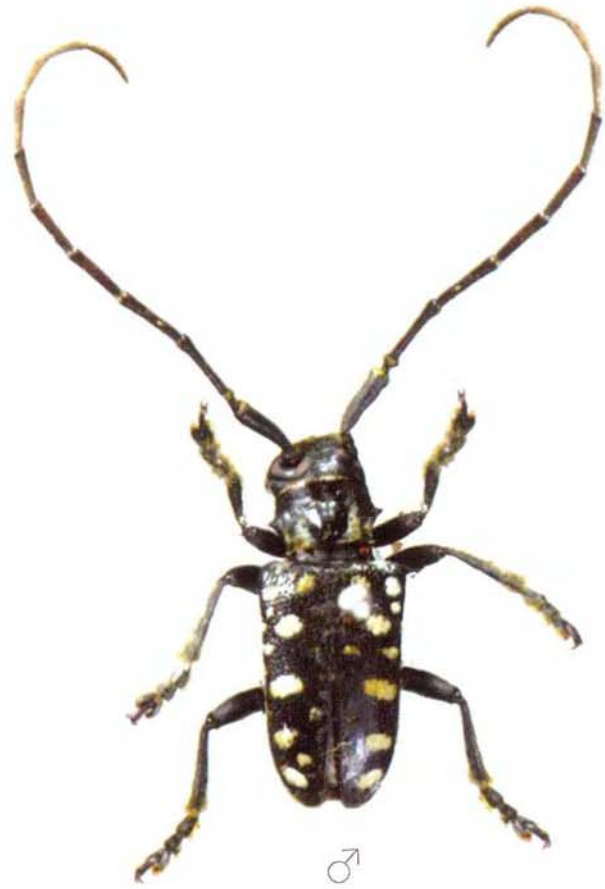
Small black, with yellowish spots on elytra. Pronotum bears a rather thin, sharply pointed tooth at side. Elytra are slightly granulated at base.

Length 9-17 mm.

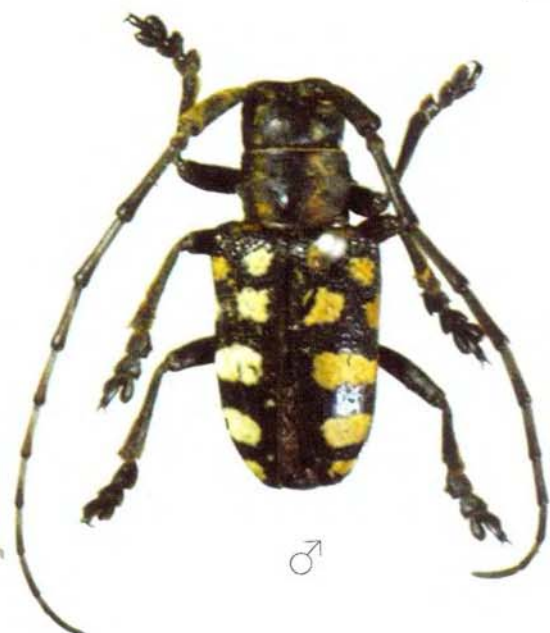
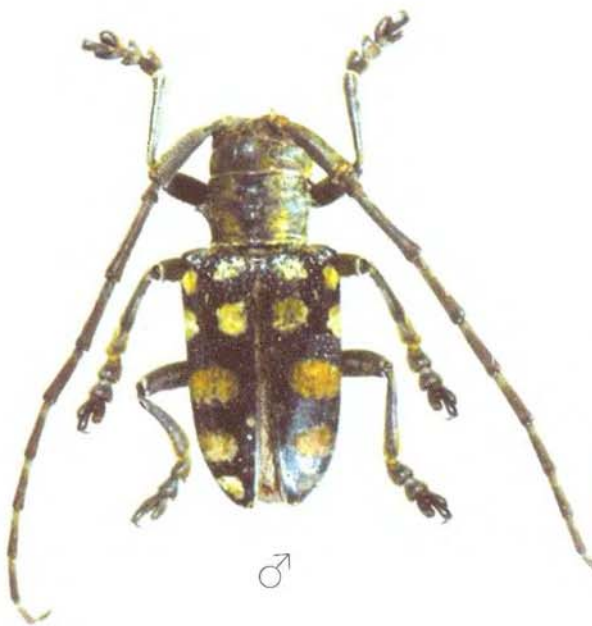
Distribution: Laos, Thailand (Doi Pui, Fang).



(2.0 X)

A123. *Acalolepta sericeipennis*A124. *Anamera alboguttata*

(2.7 X)

A125. *Anamera harmandi*

Anoplophora Hope, 1839

Antennal scape usually with a scar; pronotum broader than long

A126. ***Anoplophora birmanica***

ด้วงม้ายลายเขียวแถบตรงพม่า

Greenish and black, pronotum strongly toothed at sides, with two bluish-green patches at both sides of the median line, but meet at the front margin and base; elytra with five transverse bands of greenish pubescent, reaching the suture and with a spot at hemeral angle of each elytron.

Length 40-48 mm.

Distribution: Myanmar, Thailand (Umphang, Mae Tha).

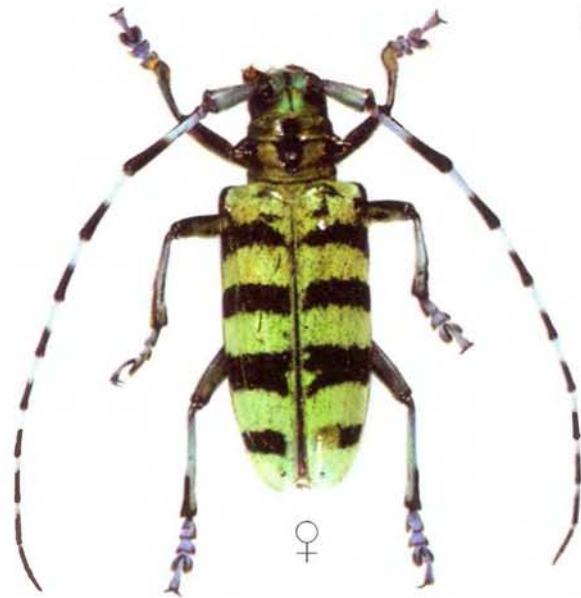
A127. ***Anoplophora elegans*** Gahan, 1888

ด้วงม้ายลายเขียวแถบกว้าง

Bluish-green and black, pronotum strongly toothed at sides and with two bluish-green patches at both sides of the median line; elytra with five transverse bands of bluish-green pubescent, not reaching the suture, the 4th band usually divided into four spots; antennae black with pubescence bluish-green at the basal and apical of most segments, remaining a narrow black ring at the joint between each two segments.

Length 27-41 mm.

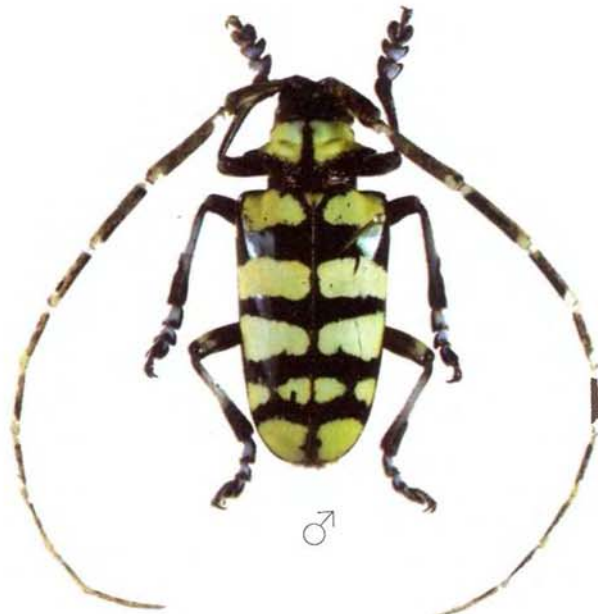
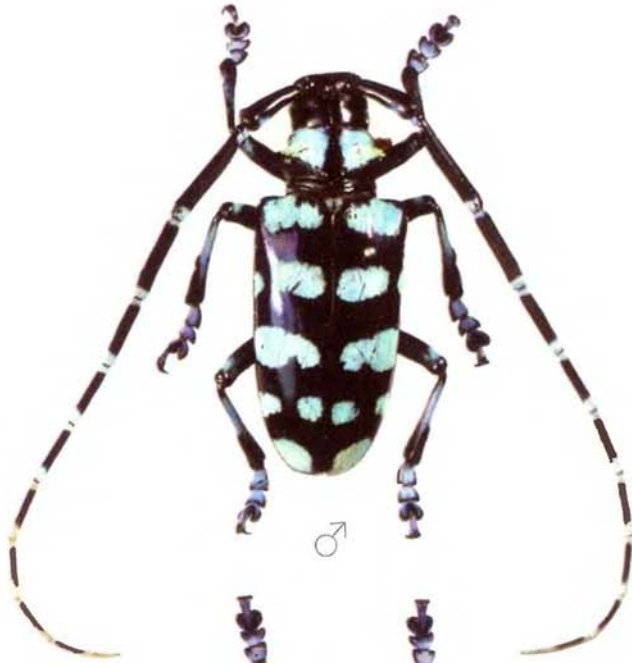
Distribution: Myanmar, N. Vietnam, Laos, Thailand (Wiang Pa Pao).



(1.0 X)

A126. *Anoplophora birmanica*

(1.1 X)

A127. *Anoplophora elegans*

A128. *Anoplophora horsifieldi* (Hope, 1842)

ด้วงมัลลายแถบใหญ่

Greenish and black, pronotum strongly toothed at sides and with two broad greenish patches at both sides of the median line; elytra with four broad transverse bands of greenish pubescent, almost reaching the suture, the basal band rather far separated; antennae black with pubescence whitish at the basal of most segments, remaining a narrow black ring at the joint between each two segments.

Length 38-40 mm.

Distribution: Myanmar, Thailand (Wiang Pa Pao).

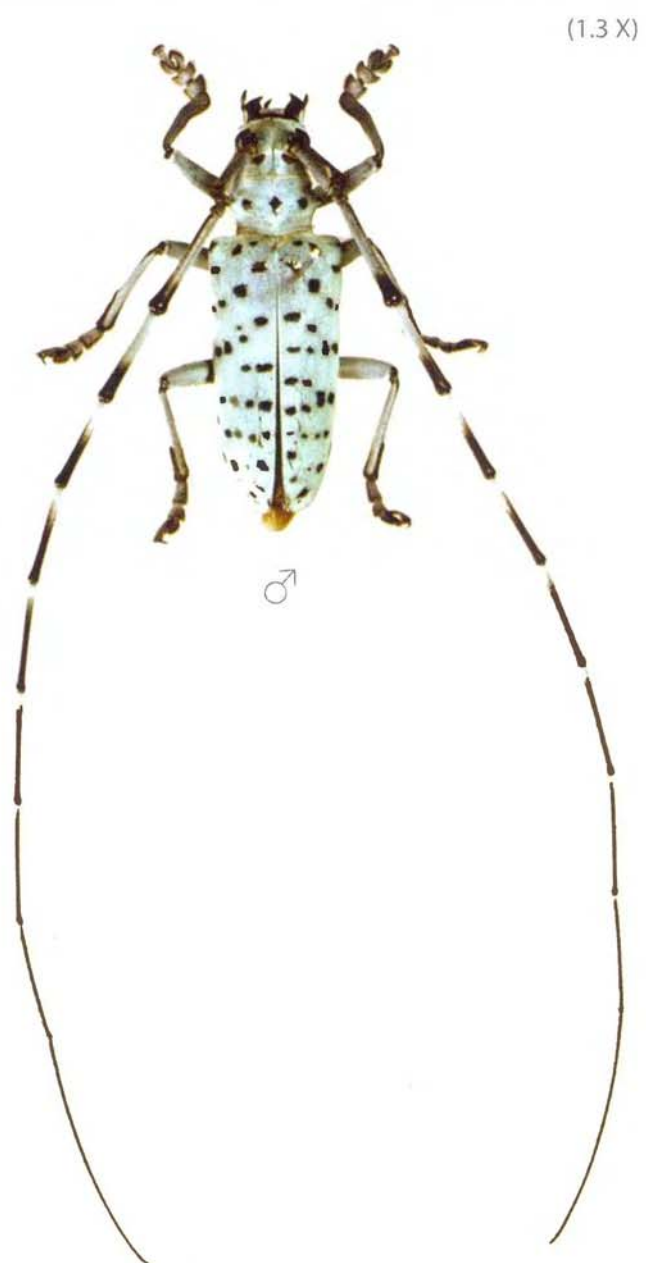
A129. *Anoplophora versteegi* (Ritsema, 1881)

ด้วงมัลลายเทาจุดดำ

Antennae are very long, longer than twice of the body length. Pronotum bears a strong tooth at each side; elytra bluish-gray with 7-8 transverse series of black spots.

Length 20-32 mm.

Distribution: India, Myanmar, N. Vietnam, Laos, Malaysia, Thailand (Wiang Pa Pao).

A128. *Anoplophora horsifieldi*A129. *Anoplophora versteegi*

A130. *Anoplophora zonatrix* (Thomson, 1878)

ด้วงม้ายาสีฟ้าธรรมดา

Blue and black; pronotum strongly toothed at sides, with a short greenish-blue patches at both sides of the median line. Elytra bear five transverse greenish-blue bands, the 3rd and the 4th bands usually broken into 3-4 spots and not in a straight line; antenna black with pubescence bluish-gray at the basal half of each segment.

Length 19-30 mm.

Distribution: Myanmar, Laos, N. Thailand (Wiang Pa Pao).

Arctolamia (Gestro, 1888)

Elytra covered with long hairs.

A131. *Arctolamia cruciatus*

ด้วงหนวดยาวขนสีจุด

Head is black, with a deep narrow median groove, yellowish at between the antennal bases; antennae black, with basal half of most segments yellowish pubescent. Pronotum is black, strongly toothed at sides, strongly rugose above. Elytra bear black raised spots at base, strongly fringed with long hairs above, with two yellowish pubescent patches on each elytron which sometimes unite together.

Length 23-38 mm.

Distribution: N. Thailand (Wiang Pa Pao).



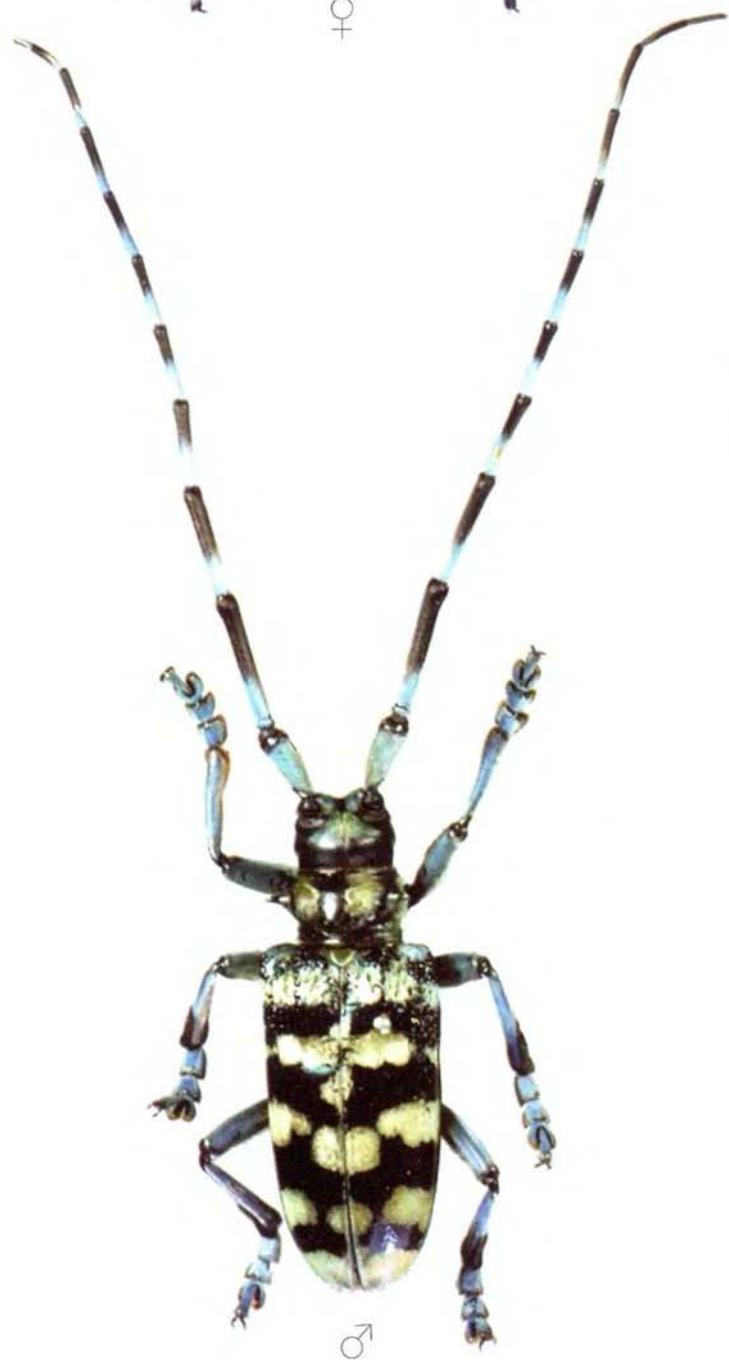
(1.3 X)

♀



(1.4 X)

♂



♂



♀



♀

A130. *Anoplophora zonatrix*A131. *Arctolamia cruciatus*

A132. *Arctolamia fasciata* Gestro, 1890

ด้วงหนวดยาวขนสองแถบ

Head is black, with a deep narrow median groove, yellowish at between the antennal bases; antennae black, with basal half of most segments yellowish pubescent. Pronotum is black, strongly toothed at sides, strongly rugose above. Elytra bear black raised spots at base, strongly fringed with long hairs above. Differs from the preceding species by having two transverse black band, at base which reached or not reach the lateral margin and the other band at behind the middle which separated to be two patches in some specimens.

Length 23-41 mm.**Distribution:** Myanmar, Laos, N. Thailand (Fang, Doi Inthanon, Wiang Pa Pao).A133. *Arctolamia fruhstorferi*

ด้วงหนวดยาวขนเมืองน่าน

Head and pronotum are reddish brown; antennae brownish yellow, black at apical half of most segments, with also black hairs at those apical black part of segments 1-4. Elytra bear black raised spots at base, strongly fringed with long hairs above, with two black bands, one at base which usually produced downwards at suture and also at lateral sides, the other band at behind the middle sometimes separated to be two patches. Photo contributed by Mr. Worawut Worakuttanon.

Length 30-38 mm.**Distribution:** Laos, N. Thailand (Nan).A134. *Arctolamia villosa* Gestro, 1888

ด้วงหนวดยาวขนไร้จุด

Head is black, with a deep narrow median groove, yellowish at between the antennal bases; antennae yellow, black at apical half of most segments. Pronotum is black, strongly toothed at sides, strongly rugose above. Elytra pubescence yellowish brown, with black raised spots at base, strongly fringed with long hairs above, without any black band.

Length 30-37 mm.**Distribution:** N. Thailand (Wiang Pa Pao, Doi Pha Hom Pok).



(1.4 X)

♀

(Fang)



♀

(Nan)

A133. *Arctolamia fruhstorferi*

(1.2 X)



♂

(Waing Pa Pao)



♂



♀

A132. *Arctolamia fasciata*

♀

A134. *Arctolamia villosa*

Aristobia Thomson, 1868

Prothorax strongly toothed at sides; elytra broadest at base, with small black raised spots near the base and at humeral angles; antenna slightly longer than the elytra, with a broad cluster of black wool-like hairs at the joint between segments 3 and 4.

A135. **Aristobia approximator** (Thomson, 1865)

ด้วงหนวดยาวจุดเหลืองดำ

Bright orange-yellow with black spots; pronotum with two broad black longitudinal stripes at both sides of median line; elytra black with three longitudinal series of yellow spots above each elytron.

Length 20-36 mm.

Distribution: India, Myanmar, Cambodia, Vietnam, Malaysia, Laos, Thailand.

Host : *Casuarina* (สนประติพัทธ์และสนทะเล), *Aglaia* (ยมหอม), *Cassia* (ราชพฤกษ์), *Peltophorum* (นนทรี), *Lagerstroemia* (อินทนิลน้ำ), *Swietenia* (มะฮอกกานี), *Tectona* (สัก), *Rosa* (กุหลาบ), *Adina* (กว้าว), *Pyrus* (แอปเปิ้ล), *Dalbergia* (พะยุง), *Eucalyptus* (ยูคาลิปตัส), *Annona* (น้อยหน่า), *Xylia* (แดง).

A136. **Aristobia freneyi** Schmitt

ด้วงหนวดยาวแดงบ้านใต้

Closely similar to *A. horridula*, but paler, reddish-brown, with fewer clusters of black hairs upon elytra.

Length 22-31 mm.

Distribution: Peninsular Thailand (Ranong).

A137. **Aristobia horridula** (Hope, 1831)

ด้วงหนวดยาวสีตาลแดง

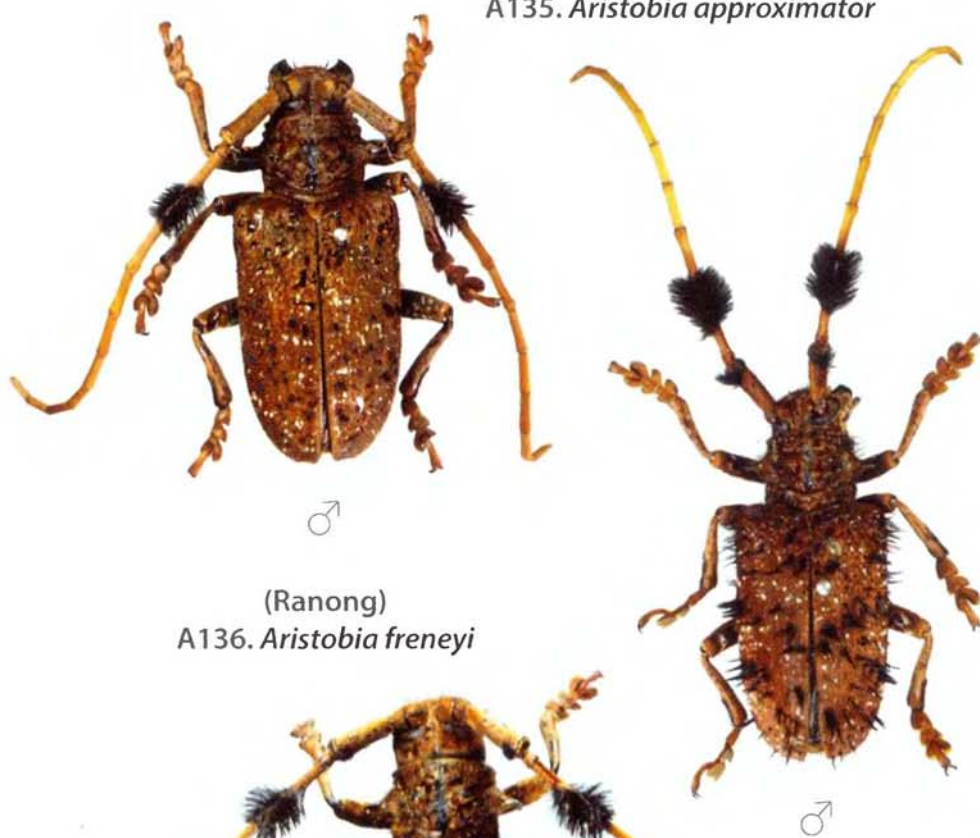
Dark reddish brown with small clusters of black hairs upon the elytra; antenna brownish with a large cluster of long black hairs; legs brownish.

Length 22-31 mm.

Distribution: India, China, Myanmar, Vietnam, Laos, Thailand (Chiang Dao).

A135. *Aristobia approximator*

(1.6 X)

(Ranong)
A136. *Aristobia freneyi*

(Waing Pa Pao)

A137. *Aristobia horridula*

A138. *Aristobia voeti* Thomson, 1894

ด้วงหนวดปมสีเทา

Body black with pubescence gray above the head, pronotum, elytra, antenna and legs except some black spots above the head, pronotum, elytra, antennal segments 1-2, the joints, femora and tarsi; antenna with a large cluster at the joint between segments 3 and 4 and with a smaller cluster at the joint between segment 2 and 3, fringed with long hairs at the joint between segment 4 and 5.

Length 25-39 mm.

Distribution: China, Myanmar, Laos, Thailand.

A139. *Blephephaeus succinator* (Chevrolat, 1852)

ด้วงหนวดยาวหน้ามอม

Pronotum black with three longitudinal stripes of pubescence grayish-white at median and at its both sides; elytra black with pubescence grayish-white marking forming an X-shaped above the middle.

Length 23 mm.

Distribution: Malaysia, Myanmar, N. Vietnam, Laos, N. Thailand (Wiang Pa Pao).

Callophophora Thomson, 1864

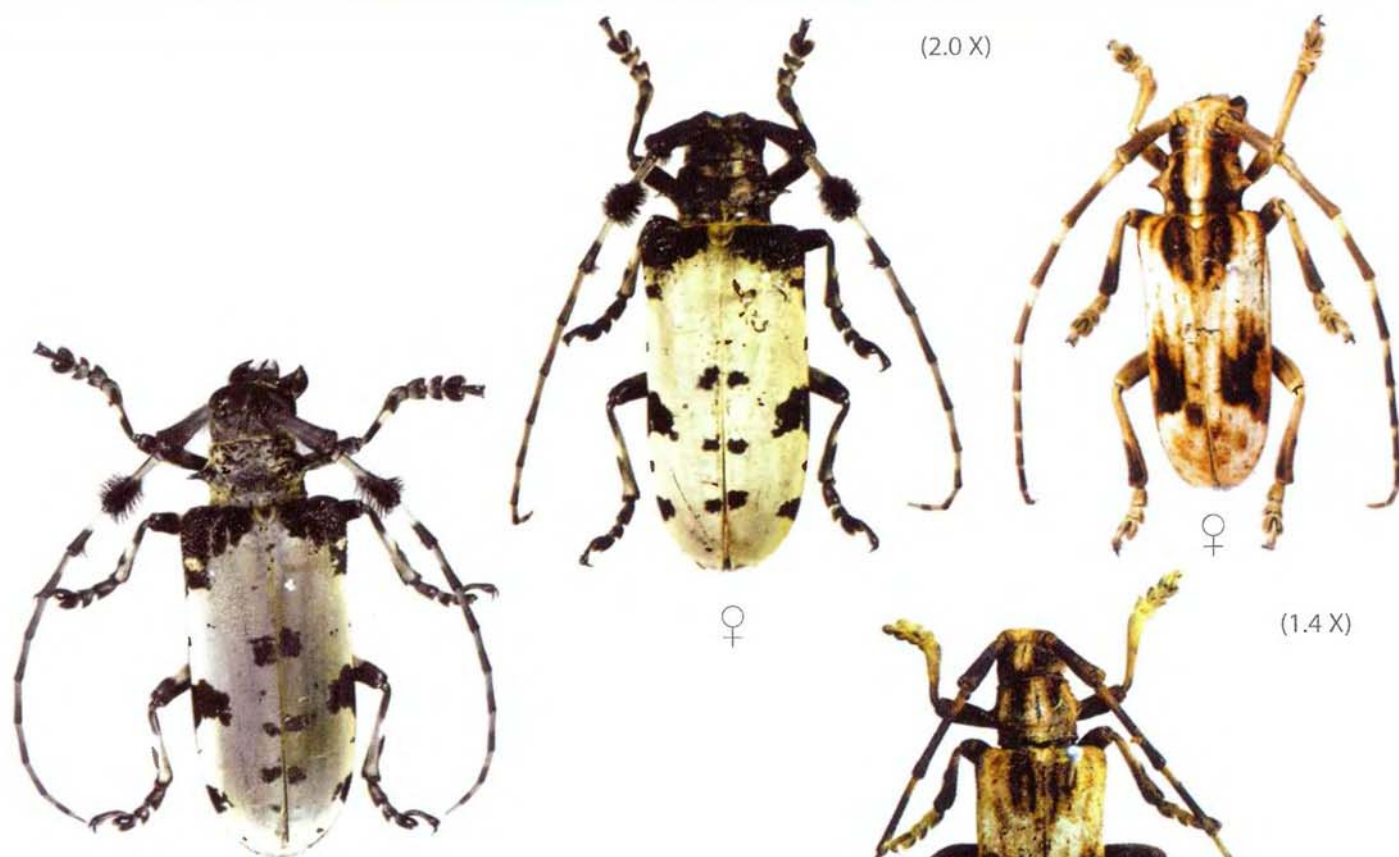
A140. *Callophophora sollii* (Hope, 1840)

ด้วงม้ามันจุดเขียวอ่อน

A single species of the genus, metallic deep-blue, smooth and very shining; pronotum strongly toothed at sides, with a pair of broad longitudinal stripes of pubescence greenish at both sides of median line; elytra with pubescence greenish: a longitudinal row of eight to ten spots near the suture, another row about ten or more irregular spots in the middle and some spots at the lateral margin of each elytron, antenna with pubescence bluish-green at the basal half of segments 3-9.

Length 40-60 mm.

Distribution: India, Myanmar, N. Vietnam, Laos, N. Thailand (Doi Pah Hom Pok, Wiang Pa Pao).



♂

A138. *Aristobia voeti*

♂

A139. *Blepephaeus succinator*

♂



♀

A140. *Calloplophora sollii*

A141. *Calothyrsa margaritifera* (Westwood)

ด้วงหนวดยาวลายไทย

A stout grayish-brown long-horn with beautiful white markings; body rather stout; pronotum strongly toothed at sides, with a broad white stripe which marking with a narrow black line inside at lateral margin of each side; elytra with three large and a small white markings of unique-shaped.

Length 32-35 mm.

Distribution: Nepal, Thailand (Kanchanburi, Wang Neua - Lampang).

A142. *Celosterna fabricii* Thomson, 1865

ด้วงหนวดยาวก้ามะถันเทียม

This species is very similar to the next species in external characteristic except the coloring which is pale brown.

Length 33 mm.

Distribution: Laos, Thailand (Phu Toei – Kanchanaburi)

Celosterna Blanchard, 1845A143. *Celosterna pollinosa sulphurea* Heller, 1907

ด้วงหนวดยาวก้ามะถัน

An entirely sulfur-colored beetle; pronotum with a sharp tooth at side, a narrow black stripe at median line; elytra broad at base, black at the shoulders; with small black raised spots near the base covering 1/3 of the elytral length of.

Length 37-56 mm.

Distribution: Indonesia, Malaysia, Laos, Thailand (Wang Neua - Lampang).

(1.4 X)



♀



♀



♀

A141. *Calothyrsa margaritifera*

(1.2 X)



♀



♀ △

A142. *Celosterna fabricii*

♀ △



♀

A143. *Celosterna pollinosa sulphurea*

A144. *Trichoclosterna rouyeri* Rits, 1906

ด้วงหนวดยาวฐานปีกบวม

Reddish-brown body; antennae brownish-yellow, with apical of each segment black, very long about 2x of the body length; pronotum with a sharp tooth at side; elytra broadest at base, with a raised area at basal $\frac{1}{4}$ and many irregular small black raised spots of each elytron.

Length 37-56 mm.

Distribution: Indonesia, Malaysia, Laos, Thailand (Wang Neua - Lampang).

Epepeotes Pascoe, 1866A145. *Epepeotes luscus densemaculatus* Breuning, 1943

ด้วงหนวดยาวลายไหล่ดำ

Head and pronotum black with pubescence grayish-white markings, a broad creamy yellow longitudinal stripes, irregular pale spots at sides, the latter with a strong tooth at side; scutellum and elytra creamy yellow, the latter with a number of black spots of various sizes and shaped and a black patch at base almost reach the humeral angle of each elytron.

Length 20-29 mm.

Distribution: China, Myanmar, N. Vietnam, Laos, N. Thailand (Khao Yai).

Eutaenia Thomson, 1857

Black with pubescence yellow covering nearly the whole body, remaining some black stripes and spots above the body, antennae and legs; pronotum toothed at sides and with a raised transverse ridge near the base.

A146. *Eutaenia corbeti* Gahan, 1893

ด้วงหนวดยาวเสื่อช่อง

Black with pubescence yellow as follows: two rectangular spots at front angle and hind angle of each side of pronotum, a spot at scutellum, four to five spots of different shapes and sizes on each elytron, forming three broken transverse bands and a small window just before the middle at the suture.

Length 16-36 mm.

Distribution: India, Myanmar, Laos, Thailand (Wiang Pa Pao).

A144. *Celosterna rouyeri*A145. *Epepeotes uncinatus salvazai*A146. *Eutaenia corbetti*

A147. ***Eutaenia trifasciella*** (Whitew, 1850)

ด้วงหนวดยาวเสื่อท้ายจุด

Pubescence yellow, with transverse black bands at base of head and middle of the pronotum; around the scutellum, two broad transverse bands before and after the middle and a pair of black spots near the apex. Antennae are yellow with black at apical half of most segments.

Length 23-29 mm.

Distribution: Malaysia, S. China, Hong Kong, Formosa, N. Vietnam, Laos, N. Thailand (Chiang Dao, Sansai, Wiang Pa Pao).

Gerania Serville, 1835A148. ***Gerania bosci bosci*** (Fabricius, 1801)

ด้วงหนวดยาวแมงมุม

Antennae and legs are black, very long; pronotum is pubescence grayish-white with a pair of black spots at before the middle and a short transverse band near the base. Elytra are dark brown to black, with irregular pubescence grayish-white interfering by a number of dark brown spots.

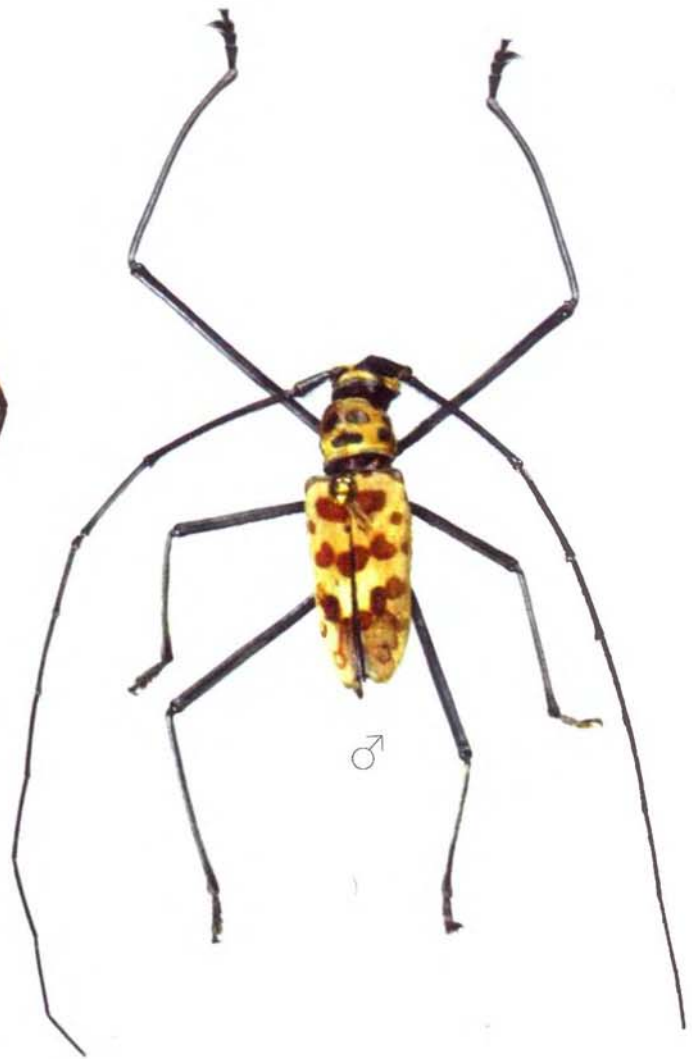
Length 14-20 mm.

Distribution: Laos, Malaysia, Japan, N. Thailand (Doi Saket, Fang).

Host : *Streblus asper* (ข่อย).



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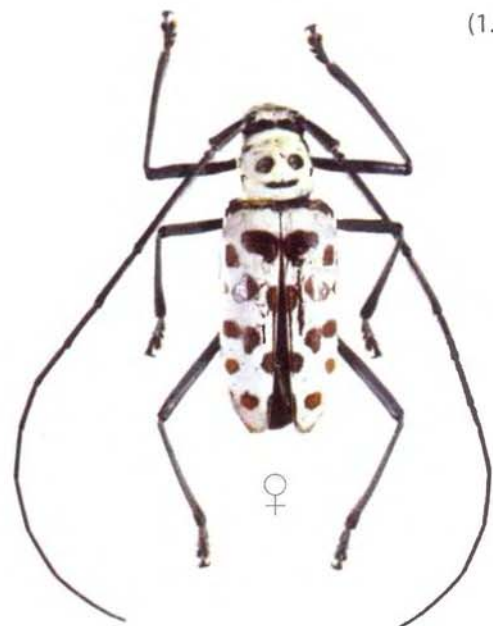
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A147. *Eutaenia trifasciella*

A148. *Gerania bosci bosci*

Macrochenus Guérin, 1843A149. ***Macrochenus assamensis*** Breuning, 1935

ด้วงหนวดยาวเก๊าฮัสสัม

Black clothed with pubescence brownish above the body and with white markings: three longitudinal stripes between eyes and above pronotum, some irregular spots on elytra; pronotum moderately transverse rugose above, without a tooth at side. Antennae are very long, about 3x of the body length in the male.

Length 21-24 mm.**Distribution:** Laos, Thailand (Sansai, Fang).A150. ***Macrochenus isabellinus*** Aurivillius, 1920

ด้วงหนวดยาวคอม้าลาย

Black, pronotum long, without tooth at side; head and pronotum with three broad longitudinal white stripes at median and at sides; elytra with pubescence ashy-white covering nearly the whole elytra interfering by numerous black spots.

Length 22-35 mm.**Distribution:** China, Myanmar, N. Vietnam, Thailand (Fang, Wiang Pa Pao).



(2.2 X)

(2.0 X)

A149. *Macrochenus assamensis*A150. *Macrochenus isabellinus*

Paraleprodera Breuning, 1935

Characteristics of the genus: Pronotum with a strong tooth at side; antennae very long in male about twice as long as the body; elytra rough at base, usually with a broad triangular patch of pubescence brownish to chocolate-brown at base and a pair of spots at lateral margins.

A151. ***Paraleprodera inidiosa*** (Pascoe, 1888)

ด้วงหนวดยาวเกะคู่

Grayish-brown above pronotum and elytra; elytra with a brownish triangular patch at base, slightly darker than the ground colored and with two small chocolate-brown spots at sides at about one third from apices.

Length 22-25 mm.

Distribution: Laos, Thailand (Wiang Pa Pao).

A152. ***Paraleprodera cordifera*** (Pic, 1930)

Paraleprodera cordifera saigonensis Pic, 1930

ด้วงหนวดยาวเกะใหญ่

Head, pronotum and the basal half of elytra covered with a large chocolate-brown, the triangular patch at base of elytra rising from both shoulders to a little bit beyond the middle and with a pair of small spots of the same color at lateral margins about 1/3 from apices.

Length 34-35 mm.

Distribution: Vietnam, Laos, Thailand (Muak Lek – Saraburi, Chon Buri).

A153. ***Paraleprodera crucifera*** (Fabricius, 1792)

ด้วงหนวดยาวเกะเสริม

Pronotum grayish-brown, strongly toothed at each sides; elytra with a pale brownish triangular patch at base slightly darker than the ground colored of brownish-grey, with a large dark brown patch at lateral margin and with a small subapical brown spot of each elytron, the former contains a small white lateral spot at outer margin.

Length 18-36 mm.

Distribution: India, Laos, Thailand (Phu Khieo, Wang Neua - Lampang).



(1.2 X)



♂

A151. *Paraleprodera inidiosa*

(1.0 X)



♂



♂

(1.7 X)



♂

A152. *Paraleprodera cordifera saigonensis*

♀

A153. *Paraleprodera crucifera*

A154. *Paraleprodera stephanus fasciata* Breuning, 1943

ด้วงหนวดยาวเกาะข้างม

Pronotum grayish-brown, strongly toothed at each sides; elytra with a an irregular brown triangular patch at base, the posterior end usually broken and covered 2/5 of the leytral length from base, another similar patch at lateral margin and with a darker area at sutural tip, make an X-shaped forming by the lighter back-ghround.

Length 15-30 mm.

Distribution: Sikkim, N. Vietnam, Laos, Thailand (Wiang Pa Pao, Doi Pha Hom Pok).

Parepepeotes Breuning, 1938A155. *Parepepeotes laosensis* Breuning, 1964

ด้วงหนวดยาวจุดดาวลาว

Greenish black with greenish yellow markings, pronotum strongly toothed at sides, with a broad longitudinal stripe at both sides; elytra with numerous of black raised spots mainly at base, with short stripes at middle base, an irregular patch at middle side, another rounded spot at between the patch and base, three irregular subapical spots and some scattered small spots as illustrated.

Length 22-29 mm.

Distribution: Laos, Thailand (Doi Pui).

A156. *Parepepeotes breuningi* (Pic, 1935)

ด้วงหนวดยาวจุดดาวเหนือ

Greenish black with greenish yellow markings, pronotum strongly toothed at sides, head and pronotum with three longitudinal stripes at median and both sides; elytra with numerous of black raised spots mainly at base, with a broad short stripe at middle base, a number of irregular spots as illustrated. Antennae are very long about 3x as long as the body length in male.

Length 22-29 mm.

Distribution: India, N. Vietnam, Laos, Thailand (Doi Inthanon).

Perihammus Aurivillius, 1923A157. *Perihammus lemoulti* Breuning, 1938

ด้วงหนวดยาวคาดขาว

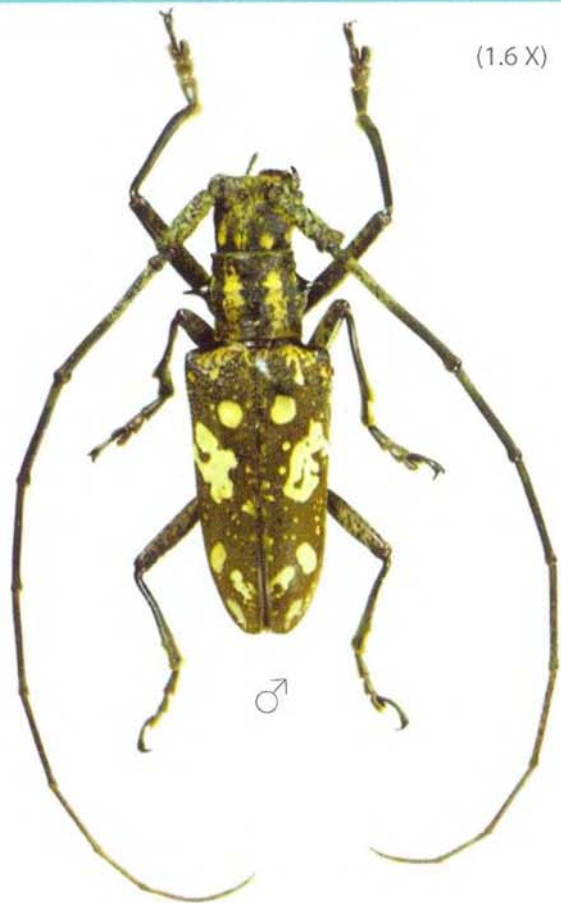
Small black, pronotum slightly shorter than broad with a strong tooth at side; elytra with two transverse bands of pubescence white at the front half which interfering by a pair of black spots and a narrower one at behind the middle.

Length 18-20 mm.

Distribution: Laos, N. Thailand (Fang, Doi Pui).



♂



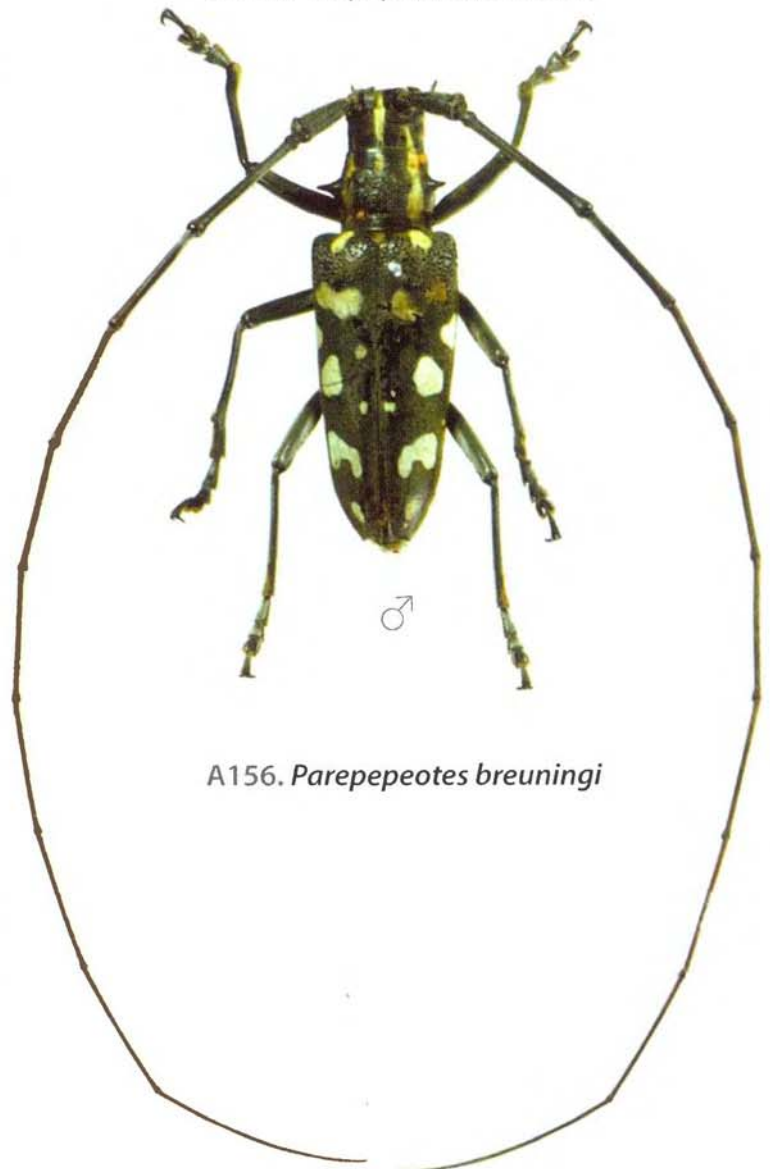
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A155. *Parepepeotes laosensis*



♀

A154. *Paraleprodera stephanus fast*



♂

A156. *Parepepeotes breuningi*



♂

A157. *Perihammus lemoulti*

Pharsalia Thomson, 1864A158. ***Pharsalia subgemmata*** (Thomson, 1857)

ด้วงหนวดยาวข้อย

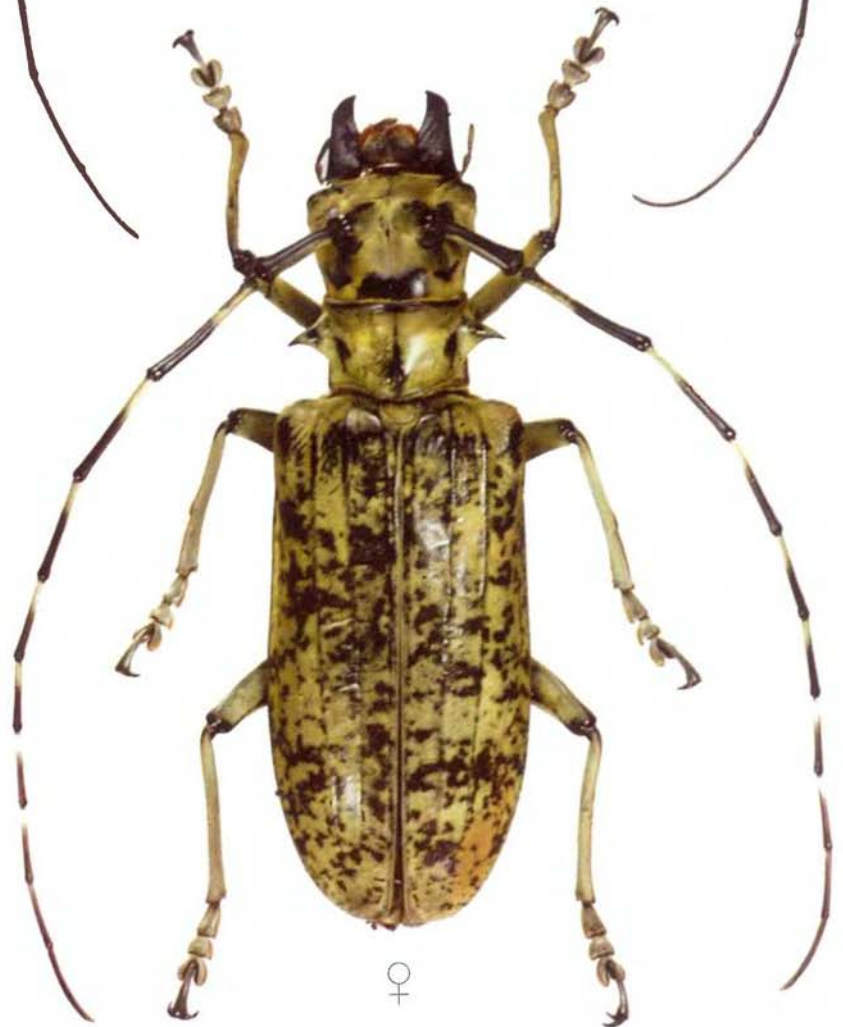
Body black with reddish-brown markings; head with a pair of longitudinal stripes between eyes; pronotum long, with a small tooth at side, two longitudinal stripes at the lateral margin and near the median line of each side; elytra rough and broadest at base, humeral angles pointed, with numerous of black raised spots and marked with dark brown, reddish brown throughout, with three short longitudinal stripes of pubescence brownish at about one fifth from apex of each elytron; the front tarsi fringed with long hairs.

Length 20-33 mm.**Distribution:** Laos, N. Thailand (Surat Thani, Wiang Pa Pao, Doi Pui).**Host :** *Strebus* (ข้อย).***Pseudomeges*** Breuning, 1943A159. ***Pseudomeges marmoratus*** (Westwood, 1848)

ด้วงหนวดยาวสีขี้ม้า

A large sized longhorn, black, clothed with pubescence olive-green: at frons, pronotum, legs, basal half of each antennal segment, above the elytra which interfering by irregular black spots; pronotum strongly toothed at sides.

Length 50-110 mm.**Distribution:** India, Myanmar, Laos, N. Thailand (Doi Pah Hom Pok, Wiang Pa Pao).**Host :** *Quercus* (ก่อ).

A158. *Pharsalia subgemmata*A159. *Pseudomeges marmoratus*

Sarathrocera White, 1846A160. ***Sarathrocera lowi*** White, 1846

ด้วงหนวดยาวผิวนวลตาล

Brownish to reddish brown, pronotum with a strong tooth at side; elytra broadest at base and slightly darker than other parts, humeral angles pointed, with numerous brown raised spots near the base; antennae about 2x longer than the elytra in male and fringed with long black hairs beneath of the segments 2 and 4.

Length 31-52 mm.**Distribution:** Indonesia, Malaysia, Laos, Thailand (Wiang Pa Pao, Kanchanaburi).A161. ***Spinaristobia rondoni*** Breuning, 1962

ด้วงหนวดปมเรียง

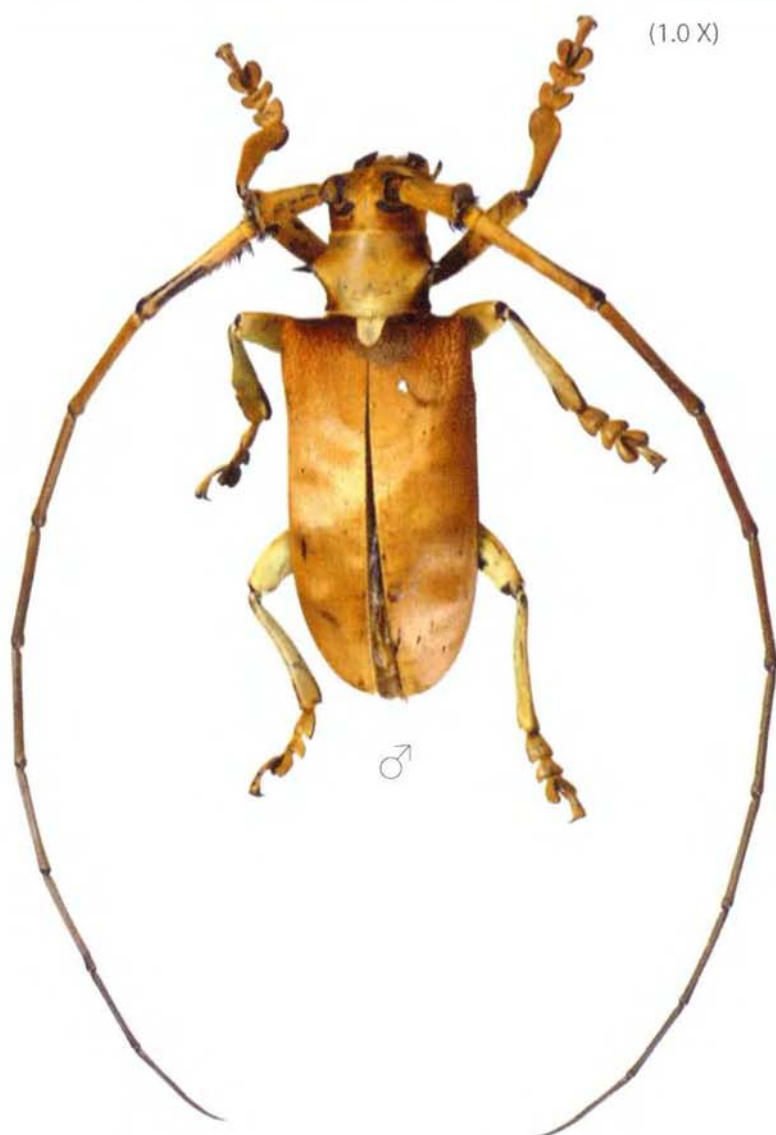
Chocolate brown with reddish brown markings; antennae are prominent, segment 1 dark brown and long, segment 2 short fringed with long black hairs, segment 3 long and fringed with long black hairs, segments 4 and 5 pale brown fringed with long hairs apically, segments 6 to 11 normal pale brown without hair fringe. Pronotum bears a strong tooth at side; elytra subparallel sided slightly narrower at apices, with numerous black raised spots, a number of longitudinal reddish brown stripes and some whitish spots.

Length 20-25 mm.**Distribution:** Indonesia, Malaysia, Laos, Thailand (Wiang Pa Pao).A162. ***Stegenagapanthia albovittata*** Pic, 1924

ด้วงหนวดยาวโคนหนวดขน

Chocolate brown with reddish brown markings; antennae are prominent, segment 1 to 5 pale brown heavily fringed with dark brown hairs beneath, segments 6 onwards normal pale brown and dark at apical end of each segment. Pronotum smooth, slightly longer than wide, straight at lateral margin, slightly produced at posterior angles, without a strong tooth at side. Elytra are elongate, with numerous of dark brown to black raised spots covering more or less half basal part, with a number of longitudinal whitish stripes near apices and some irregular whitish spots.

Length 20-28 mm.**Distribution:** Laos, Thailand (Wiang Pa Pao).



(1.0 X)

♂

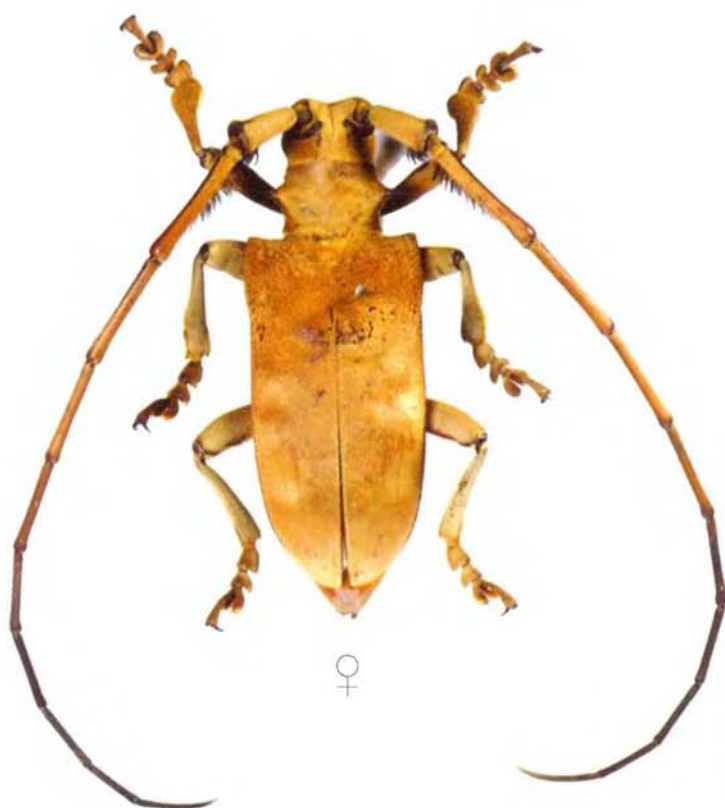


(2.0 X)

♀



♀ Δ

A161. *Spinaristobia rondoni*

♀

A160. *Sarathrocera lowi*

(2.0 X)

♀

A162. *Stegenagapanthia albovittata*

Stratioceros Lacordaire, 1869A163. ***Stratioceros princeps*** Lacordaire, 1869

ด้วงหนวดยาวขอบขาว

A dark brown medium sized longhorn with a broad grayish-brown stripe at median line extending from head to base of pronotum and tinged with orange towards the apical end; pronotum with a strong tooth at side and with two broad longitudinal stripes of creamy white at lateral margins, extending to elytral apices. Antennal scape bears an apical spine. Hind tibiae each bears an excavation pre-apically.

Length 21- 44 mm.**Distribution:** Myanmar, Cambodia, Vietnam, Thailand (Mae Tha, Khao Yai).164. ***Trachystolodes tonkinensis*** Breuning, 1943

ด้วงหนวดยาวเกาะจีน

A dark brown medium sized longhorn; head with a narrow deep groove between eyes; pronotum very rough surface, broadest at sides and with a strong tooth there. Elytra are pointed at humeral angles, strongly punctured at basal half, with a broad black patch at lateral margin just behind the middle, bordered partially by whitish.

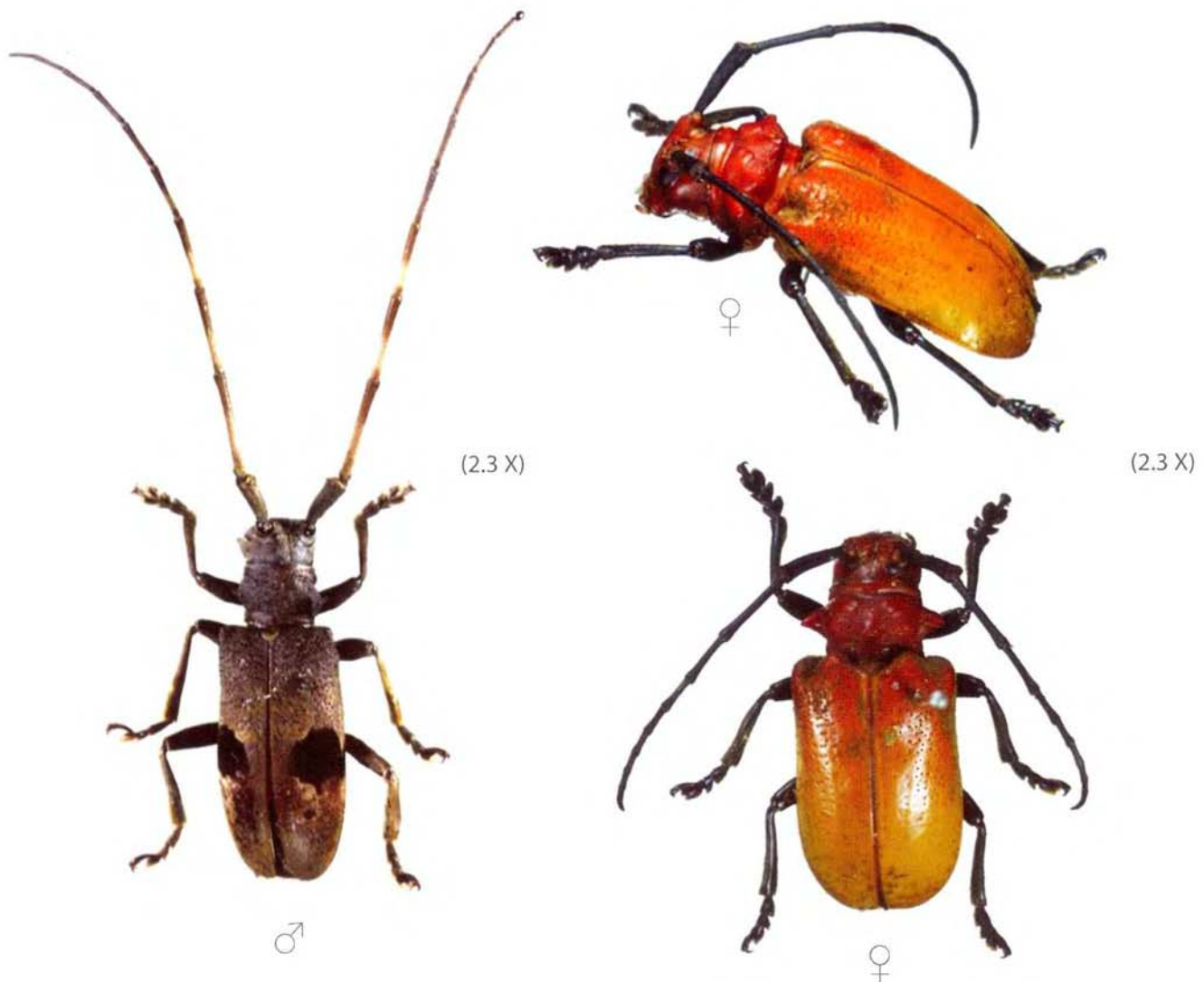
Length 17-26 mm.**Distribution:** N. Vietnam, Laos, Thailand (Wiang Pa Pao).***Thermonotus*** Gahan, 1888A165. ***Thermonotus nigripes*** Gahan, 1888

ด้วงหนวดยาวส้มสันหลังออกนูน

An orange longhorn, with antennae and legs black; head and pronotum orange to deep red, with a narrow groove between eyes; pronotum broader than long, with a very strong tooth at each side, with five raised areas at median and two pairs at both sides. Elytra are reddish yellow at base and paler at apices, smooth and shining, strongly produced forwards at middle base, moderately punctured at basal half.

Length 20-22 mm.**Distribution:** N. Vietnam, Laos, Thailand (Samoeng).

(1.3 X)

A163. *Stratioceros princeps*A164. *Trachystolodes tonkinensis*A165. *Thermonotus nigripes*

Tribe Batocerini

Pronotum broadest at the middle and with a strong tooth at side; antennal scape strongly granulated at dorso-apical, antennal segments 3 onwards with spines.

Apriona Chevrolat, 1852

This genus differs from the next genus, ***Batocera*** in pronotum and elytra without red or yellow spots except some small white dots; humeral angles usually without a small sharp spine.

A166. ***Apriona germari*** (Hope, 1831)

ด้วงหนวดยาวหม่อน

Greenish-brown, pronotum with a strong tooth at side and with strongly sculptured above; elytra with a small sharp tooth at each humeral angle, rough and with black raised spots near the base, with weak pubescence golden-brown above.

Length 32-53 mm.

Distribution: India, China, Myanmar, Laos, Thailand (Fang, Wiang Pa Pao).

Host : *mulberry* (หม่อน), *Bombax malbaricum* (จ้าว).

Batocera Castelnau, 1840

Pronotum with a strong sharply pointed tooth at each side; elytra rough, with small black raised spots near the base and usually with red-orange, yellow or white spots, humeral angle bearing a small sharply pointed spine at each side, antennal segments generally rough surface and with spines.

A167. ***Batocera davidis*** Deyrolle, 1878

ด้วงป่าหนามจุดเหลืองขูด

Greenish-brown or yellowish brown, rather large species; pronotum with a pair of broad orange spots at both sides of the median line, strongly toothed at sides; elytra with about six to eight spots, less rounded than those in ***B. rubus***, scattered towards apex, with black raised spots at the basal one-fifth.

Length 55-74 mm.

Distribution: S. China, N. Vietnam, Laos, N. Thailand (Doi Pha Hom Pok).

Host : *Ficus carica* (มะเดื่อฝรั่ง), *Mangifera indica* (มะม่วง).

A168. ***Batocera lineolata*** Chevrolat, 1852

ด้วงป่าหนามแถบขาว

Dark brown, clothed with pubescence yellowish-gray; pronotum with a pair of large yellowish-white spots; scutellum yellowish-white; elytra with a broad broken-longitudinal stripe of yellowish-white extending from the humeral angle to near the apex of each elytron, another short broad stripe extending from the middle of the base.

Length 52-59 mm.

Distribution: China, Japan, Formosa, Laos, Thailand (Khao Yai, Doi Pui).



(1.3 X)

♀



♀

A166. *Apriona germari*

(0.9 X)

(1.2 X)



♀

A167. *Batocera davidis*

♀

A168. *Batocera lineolata*

A169. *Batocera numitor ferruginea* Thomson, 1858

ด้วงป่าหนามจุดส้ม

Greenish-brown; pronotum normally with a pair of broad orange spots at each side of the median line; elytra with small black raised spots at the basal one forth, with irregular orange spots, tinted closely together near the base and six or more scattered towards the apex of each elytron.

Length 49-75 mm.

Distribution: India, S. China, Taiwan, Myanmar, Malaysia, Laos, Thailand (Wiang Pa Pao, Fang).

Host : *Mangifera indica* (มะม่วง), *Tristania burmanicus* (ตำเสาหนู), *Bombax valetonii* (จิวป่า), *Quercus* (ก่อ), *Adina cordifolia* (ก๊ว).

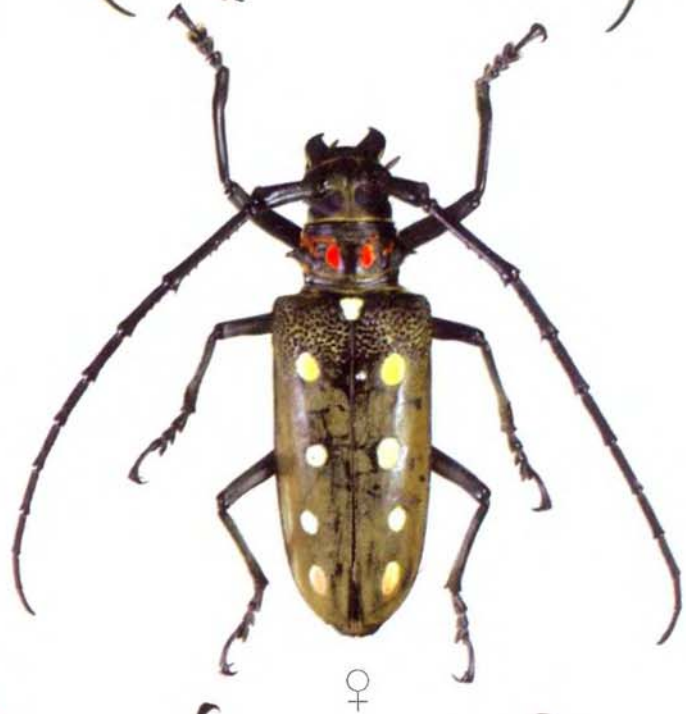
A170. *Batocera parryi* Hope, 1845

ด้วงป่าหนามจุดแดงคู่

Black clothed with pubescence yellowish-brown upon the frons, pronotum and elytra; pronotum with a pair of orange-red spots above the middle which turned to be yellow or yellowish in dried specimens; scutellum white; elytra with small black raised spots at the basal one-fifth, the non pubescence area rather smooth and shining, with four pairs of large oval pinkish-red spots lining longitudinally, the one near the apex generally oblong-shaped; antennal segments 3-9 with small spines beneath and at each apical end.

Length 45-52 mm.

Distribution: India, Myanmar, Laos, Thailand (Doi Pui, Wiang Papao, Wang Neua - Lampang).

A169. *Batocera numitor ferrug*A170. *Batocera parryi*

A171. *Batocera roylei* (Hope, 1833)

ด้วงบ้านนามจุดแดงใหญ่

Black and finely pubescent upon the pronotum and elytra; antennal scape with a small apical spine; pronotum with a pair of orange-red spots which usually united together at median; scutellum orange-red; elytra with black raised-spots at basal one-fifth, with four large orange spots and two to three or more smaller spots nearby especially in female of each elytron.

Length 50-60 mm.

Distribution: India, S. China, Vietnam, Laos, Thailand (Doi Pui).

A172. *Batocera rubus* (Linnaeus, 1758)

ด้วงบ้านนามหลังจุดขาว

Dull purplish black to black; pronotum with a pair of blood-red spots depression on both sides of the median line; scutellum whitish; elytron with three to seven (usually four large) white spots, the second spot from the base usually the largest and sometimes overlapping with another one or more spots, the forth one near the apex rather small and rounded.

Length 21-50 mm.

Distribution: Malaysia, Sumatra, Java, Laos, Thailand (Wiang Pa Pao).

Host : *Ficus elastica* (ยางอินเดีย), *Ceiba pentadra* (มุน), *Erythrina fusca* (ทองหลาง).



(0.9 X)



♂



♀

A171. *Batocera roylei*

(1.0 X)



♀



♂

A172. *Batocera rubus*

A173. *Batocera rufomaculata* (De Geer, 1775)

ด้วงบ้านามจุดนูนดำ

This species is easily distinguished from other by the elytral black raised-spots at basal half, with ten or more small to medium sized pinkish-red spots mostly at the middle of anterior half to the middle of posterior half which turned to be yellowish in dried specimens. Pronotum is strongly sculptured above, with a sharp tooth at side and a pair of c-shaped red spots at the middle of both sides. Scutellum is yellowish.

Length 42-55 mm.

Distribution: Thailand (Wiang Pa Pao, Chanthaburi).

Host : Durian, mango.

(1.0 X)



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♀ △



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A173. *Batocera rufomaculata*

A174. ***Batocera victoriana victoriana*** Thomson, 1856

ด้วงป่าหนามวิกตอเรีย

Similar to ***B. davidis***, but differs in elytra with more than 6 medium orange spots scattered towards apex and an irregular large orange spot near the middle of the base. The small black raised spots are situated at basal one-fifth of the elytra.

Length 44-65 mm.

Distribution: S. China, N. Vietnam, Laos, N. Thailand (Sansai, Fang, Wiang Pa Pao).

Tribe Gnomini

Pronotum longer than broad; antennal scape usually with a scar; coxal cavity moderately open behind.

Imantocera Thomson, 1857

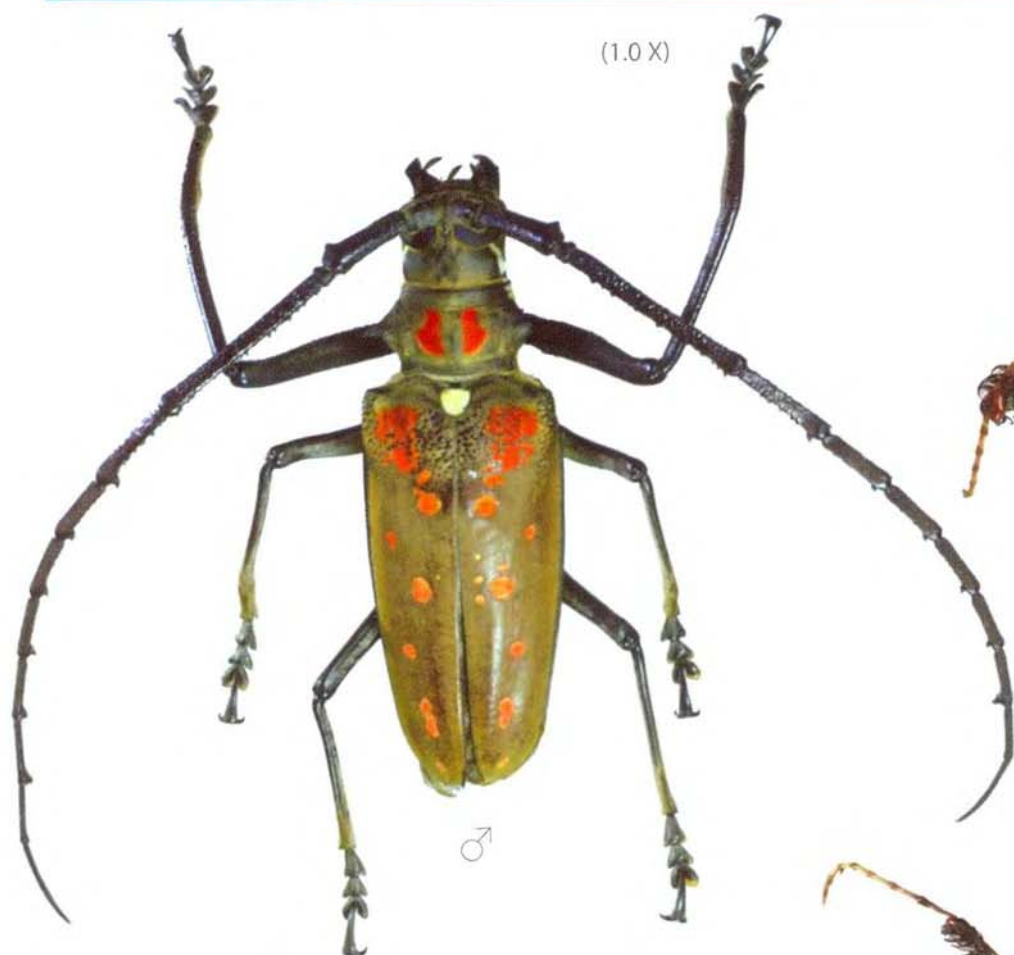
A175. ***Imantocera penicillata*** (Hope, 1831)

ด้วงหนวดยาวหน่อกลาง

Dark dirty brown, clothed with black raised spots; antennae reddish-brown, scape long and rough, segments 3-4 long and glossy, the apical end of segment 4 with a cluster of black hairs; pronotum at a large tooth at sides; scutellum yellowish; elytron with dark mottled brown to black spots and with a large yellowish-brown spot near the apex.

Length 13-22 mm.

Distribution: Laos, Thailand (Sai Yok, Doi Pha Hom Pok).

A174. *Batocera victoriana victoriana*A175. *Imantocera penicillata*

Tribe Ancylonotini

Pronotum broadest at the middle and with a strong tooth at side; antennal scape strongly granulated at dorso-apical, antennal segments without spines.

Palimna Pascoe, 1862

A176. ***Palimna annulata*** (Olivier, 1792)

ด้วงหนวดยาวสะเก็ดขาว

Pronotum weakly toothed at sides; elytra black, deeply and densely punctured, clothed with numerous of large spots of pubescence white in contrasting with the dark background colored; antennae black with pubescence white at the basal half of each segment.

Length 24-47 mm.

Distribution: Laos, Thailand (Samoeng, Fang, Khao Yai).

Tribe Dorcaschematini

Antennal scape strongly granulated at dorso-apical; pronotum rather straight and without a tooth at side.

Cylindrecamptus Breuning, 1940

A177. ***Cylindrecamptus lineatus*** (Aurivillius, 1914)

ด้วงหนวดยาวขีดขนานเหลือง

Black with longitudinal yellowish stripes; antennae black with the basal half of segments 3 and 4 white; head and pronotum with a stripe at both sides; pronotum is longer than wide, straight at side; scutellum yellowish; elytra black, with a short stripe at middle base, a short stripe at middle apex, a long stripe parallel to the suture and a stripe near lateral margin which broken at behind the middle of each elytron.

Length 9-12 mm.

Distribution: N. Vietnam, Laos, N. Thailand (Mae Rim).

Microlenecamptus Pic, 1925

A178. ***Microlenecamptus albonotatus flavosignatus*** Breuning, 1925

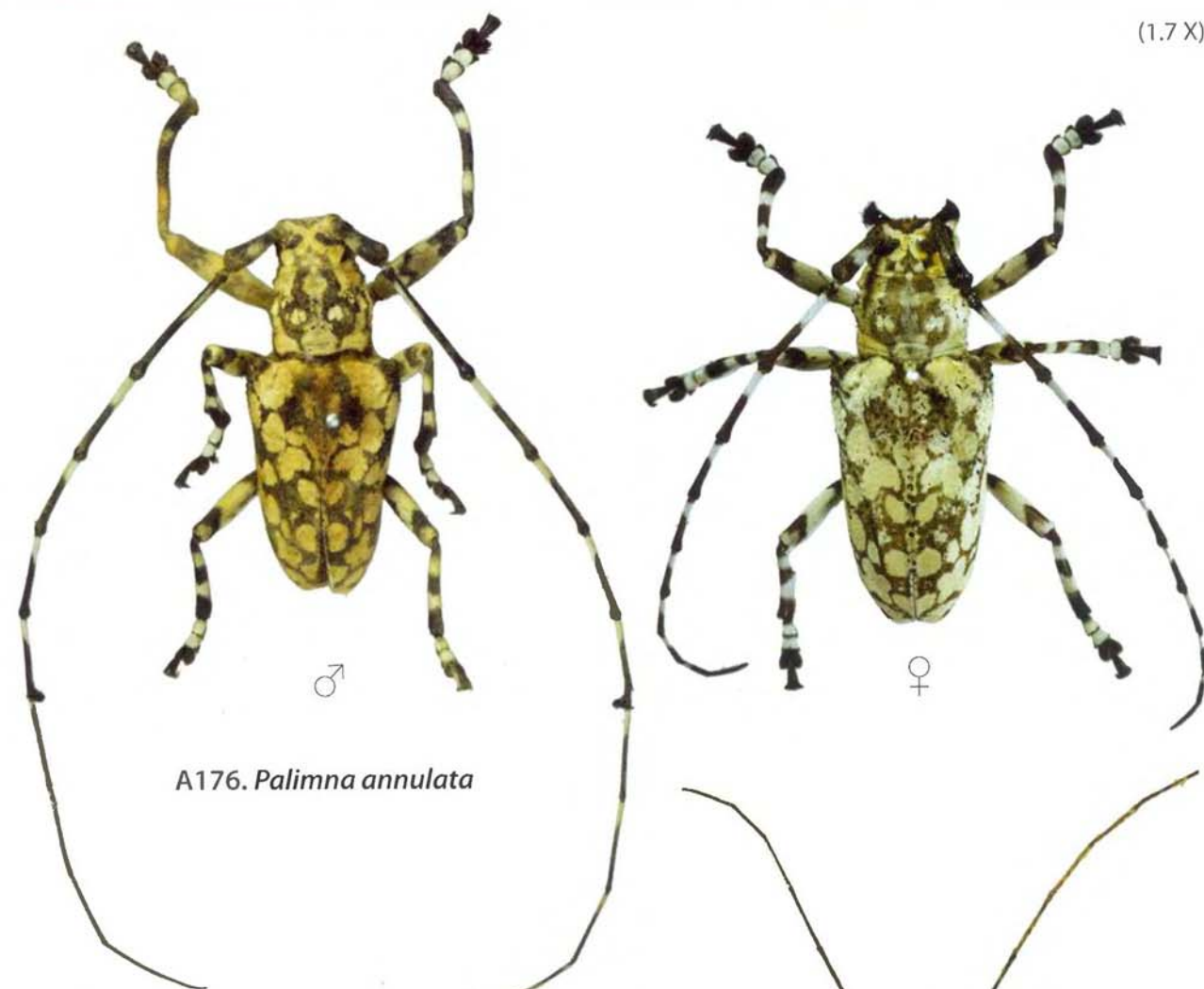
ด้วงหนวดหนารน้อย

Small black with long antennae and yellow markings; pronotum is elongate, with yellow marked at base and extending upwards at sides; scutellum yellow; elytron black with a large spot at middle base, two transverse bands at posterior half and near apex, and with another oblique band from the lateral margin at anterior half to meet the first band near the suture.

Length 8-11 mm.

Distribution: Laos, Thailand (Phu Khieo).

(1.7 X)



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A176. *Palimna annulata*

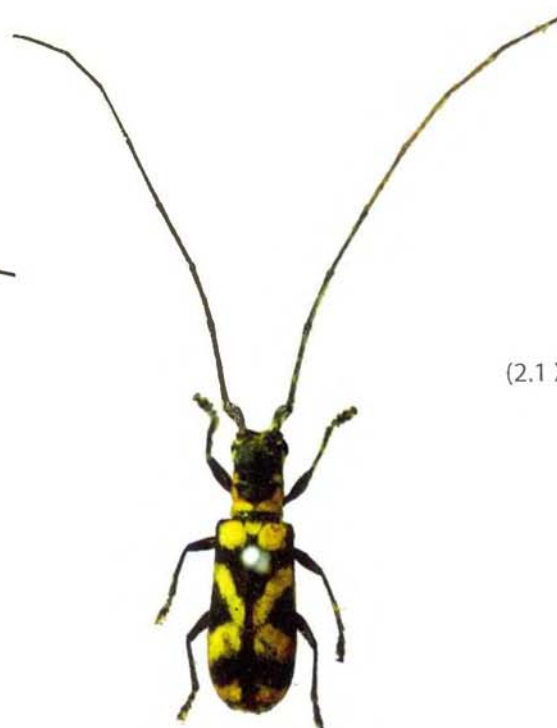
(3.0 X)



♂

A177. *Cylindrecamptus lineatus*

(2.1 X)



♂

A178. *Microlenecamptus albonotatus flavosignatus*

Olenecamptus Chevrolat, 1835

Small, long and slender body, golden brown to reddish brown, antennae very long with fine spines beneath; pronotum small at the base and swollen in the middle, elytra furnished by pinkish, orange or yellowish-white spots.

A179. ***Olenecamptus bilobus*** (Fabricius, 1801)

ด้วงหนวดทรงกระบอกคู่

A179a. ***Olenecamptus bilobus laosus*** Dillon & Dillon, 2004

Pronotum with a small white spot at the middle of the base of each side; scutellum white; each elytron with two white spots, a small one at 1/3 and larger one at 2/3 from the base and a large spot of two colors behind the scutellum which its basal two-thirds pinkish and the apical one-third white, the latter completely separated from scutellum.

Length 11 mm.

Disattribution: Laos, E. Thailand (Trat)

A179b. ***Olenecamptus bilobus quinquemaculatus*** Breuning, 1940

I identified this subspecies as the Indian subspecies based on spot pattern. It is similar to ***laosus***, but pronotum without lateral spots, the basal spot of both elytron fused to be one large spot and connected to scutellum, with also another additional posterior white spot at suture. The basal spot and two lateral pairs are yellow with white bordered. Yellow will fade out in dry specimens.

Distribution: India, N. Thailand (1 mlae, Mae Taeng, 6.vi.08, in the author's collection).

A179c. ***Olenecamptus bilobus*** ssp.

Pronotum with a small lateral white spot near the base of each side; scutellum yellowish white; with similar spot to ***laosus***, but all elytral spots are reddish, the basal spot connected to scutellum, the two spots on each elytron are oval shaped.

Length 14-16 mm.

Distribution: Confined to N. Thailand

(3 males, 7.vi.08, Wiang Pa Pao, in the author's collection.)

A180. ***Olenecamptus dominus*** Thomson, 1860

ด้วงหนวดกระบอกลายเด่น

Dark reddish brown marked with yellowish; pronotum with a short broken stripe at middle of the front; elytron with a broken stripe near the suture, a short narrow oblique stripe near the shoulder, followed by some small spots and becoming a broad stripe at lateral just before the middle and another irregular broad stripe after the middle to near the apex the apex as illustrated .

Length 16-27 mm.

Distribution: Indonesia, Malaysia, Myanmar, Vietnam, Laos, Thailand (Fang, Wiang Pa Pao).

A181. ***Olenecamptus siamensis siamensis*** Breuning, 1936

ด้วงหนวดทรงกระบอกสยาม

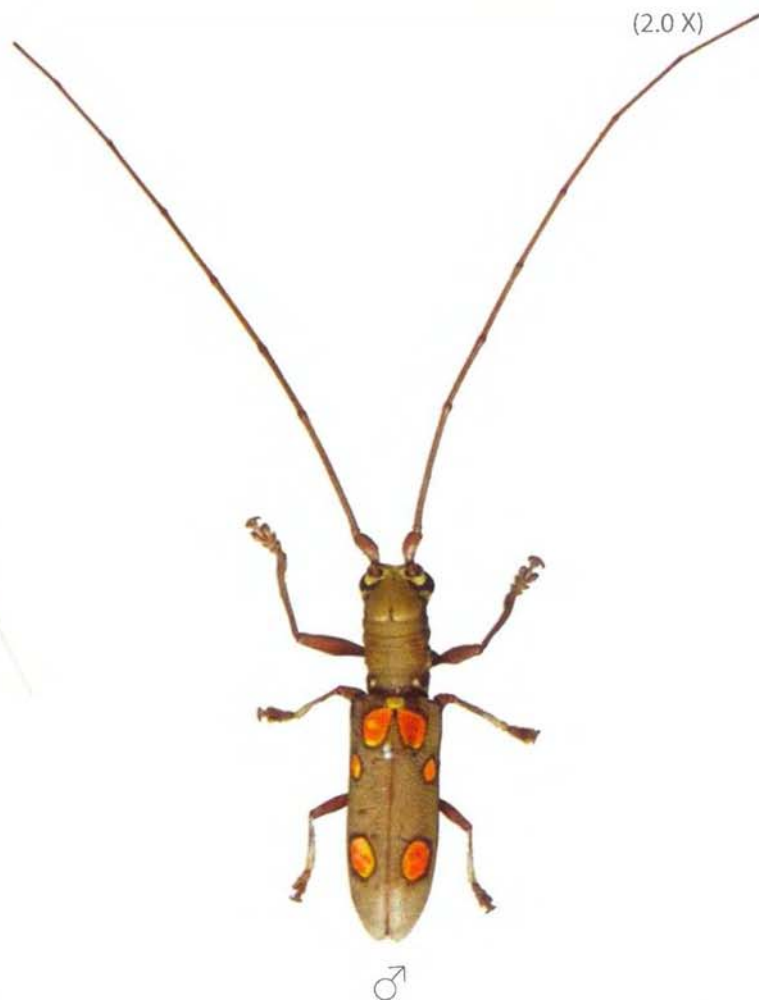
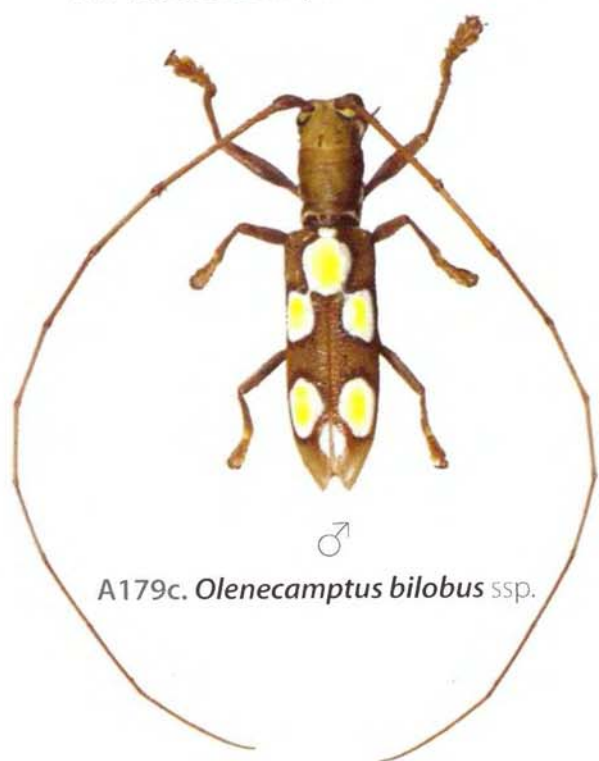
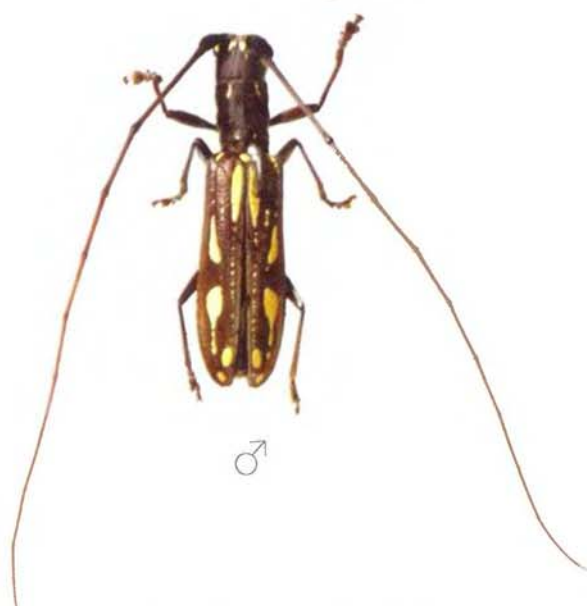
Head with a pair of broad longitudinal yellowish stripes; pronotum with two lateral white spots at middle of the front half and the middle of behind half; scutellum white; elytron with four large orange-yellow or yellowish spots from middle base to near apex of each elytron, the apical spot tends to be white.

Length 13-22 mm.

Distribution: Indonesia, Malaysia, Myanmar, Vietnam, Laos, Thailand (Wiang Pa Pao, Lampang).



(2.0 X)

A179a. *Olenecamptus bilobus laosus*A179b. *Olenecamptus bilobus quinquemaculatus*A179c. *Olenecamptus bilobus* ssp.A181. *Olenecamptus siamensis*A180. *Olenecamptus dominus*

Tribe Crossotini

Antennal scape without a scar, antennal segments without a cluster of hairs; middle tibia without a depression externally at beyond the middle; coxal cavity moderately closed behind.

Moechotypa Thomson, 1864

A182. ***Moechotypa coomani*** Pic, 1934

ด้วงหนวดยาวหลังขนนก

Pronotum broader than long, with a strong tooth at side, very rough surface; elytra brown clothed densely with dark brown hairs at base, with pubescence brownish-white forming an X-shaped marking in the middle.

Length 18-23 mm.

Distribution: N. Vietnam, Laos, Thailand (Khao Yai, Doi Pui, Fang).

A183. ***Moechotypa suffusa*** (Pascoe, 1862)

ด้วงหนวดยาวหลังขนแถบ

Pronotum short, with a weak tooth at side, bearing three dark brown narrow stripes at median and the middle of both sides; scutellum dark brown bordered by creamy white at sides; elytra clothed densely with dark brown hairs at basal one-fourth and gray fine hairs posteriorly, interfering by three narrow longitudinal reddish-brown stripes, suture and marginal borders are also reddish-brown, and with some irregular brown spots on each elytron.

Length 23-27 mm.

Distribution: Hainan, Laos and Thailand (Khao Yai).

Tribe Petrognathini

Coxal cavity moderately closed behind; middle tibia with a strong depression externally at beyond the middle.

Loesse Thomson, 1864

A184. ***Loesse sanguinolenta*** Thomson, 1864

ด้วงหนวดยาวอิฐเผา

A large stout longhorn, black with pubescence bricked-red covering throughout the body except some parts of antennae, legs and pronotum remaining black; pronotum with a strong tooth at each side.

Length 33-42 mm.

Distribution: Malaysia, Myanmar, N. Vietnam, Laos, N. Thailand (Wiang Pa Pao).



(2.0 X)



♀

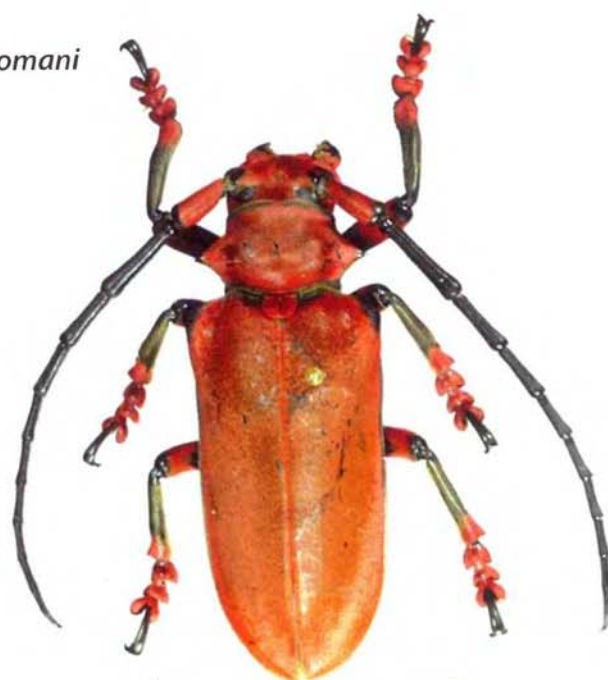


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A182. *Moechotypa coomani*

♀

(2.6 X)

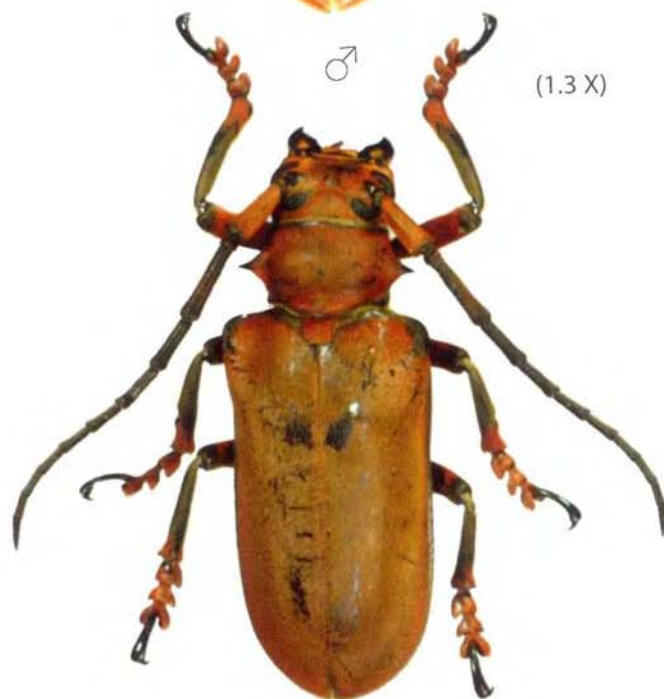


♂

(1.3 X)



♀

A183. *Moechotypa suffuse*

♀

A184. *Loesse sanguinolenta*

Threnetica Thomson, 1868A185. ***Threnetica lacrymans*** (Thomson, 1864)

ด้วงหนวดยาวพะยูน

Entire body black smooth and shining in contrasting with series of white spots on head, pronotum, scutellum, elytra and antennae; pronotum with a tooth at side, with a pair of longitudinal white stripes at lateral margins and a short white stripe at median line and middle base; antennae black with pubescence white at the basal half of each segment of most segments.

Length 20-32 mm.**Distribution:** India, Cambodia, Laos, Thailand (Fang).**Host :** *Dalbergia cochinchinensis* (พะยูน), *Strebus asper* (ข้อย), *Xylia xylocarpa* (แดง).**Tribe Ceroplesini**

Antenna segments 3-5 with a cluster of hairs at each apical end; middle tibia without a depression externally at beyond the middle.

Diastocera Thomson, 1857A186. ***Diastocera wallichii*** Hope, 1857***Diastocera wallichii tonkinensis*** Kriesche, 1924

ด้วงหนวดยาวทหาร

Deep purple, a medium sized beetle; antennae rather long in male, with a few large clusters of black hairs at the apical end of the segments 3-5, and with smaller cluster at segments 6-11; pronotum with a tooth at side at behind the middle; elytra with transverse broken bands of fine clustered hairs at middle of the front half, at the middle and at the middle of posterior half.

Length 20-47 mm.**Distribution:** India, Laos, Malaysia, Thailand (Chiang Dao).



(1.3 X)



♂



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♀ △

A185. *Threnetica lacrymans*

(1.6 X)



♂



♀

A186. *Diastocera wallichi tonkinensis*

Tribe Astathini**Astathes** Newmann, 1842A187. **Astathes gibbicollis** Thomson, 1865**Astathes gibbicollis tibialis** Pic, 1921

ด้วงหนวดยาวส้มหนวดสองสี

Reddish, yellow and black species, body fringed with fine yellow hairs; antennae black except segments 4-5 reddish yellow; head reddish yellow, with black eyes; pronotum broader than long, swollen at sides and above in the middle. Scutellum is reddish. Elytra are rounded at humeral angles and produced forwards at middle base, golden yellow, slightly punctured, but smooth and shining. Legs are reddish except tibiae, tarsi and claws which are black.

Length 11-16 mm.**Distribution:** Vietnam, Laos, Thailand (Doi Pui, Mae Rim, Wiang Pa Pao).**Tribe Saperdini****Glenea** Newmann, 1842

Small sized; pronotum without toothed at sides, slight swollen before the middle and abruptly expanded at the base; antennal scape long more or less the same length as the 4th segment.

A188. **Glenea aeolis laosica** Breuning, 1963

ด้วงประดับขีดเหลืองลาว

Black body with yellow markings; legs with femora red, tibiae black; antennae rather long and black; head yellow between eyes. Pronotum is longer than wide, yellow with a longitudinal black patch in the middle of each side. Elytra is black, each with a longitudinal yellow stripe at the suture, another stripe from humeral angle to almost apex which usually broken to be tree spots, and with two more spots between those two stripes near the base and before the middle.

Length 10-12 mm.**Distribution:** Laos, Thailand (Wiang Pa Pao).A189. **Glenea astathiformis** Breuning, 1958

ด้วงประดับปีกน้ำเงิน

A beautiful species, yellow except elytra entirely metallic blue, black eyes and black at apical parts of antennae and legs; head with a narrow groove between eyes. Pronotum is almost square, convex above, slightly rounded at sides. Elytra with fine punctured and thinly fringed with yellow hairs, smooth and very shining.

Length 14-16 mm.**Distribution:** Assam, Laos, Thailand (Wiang Pa Pao).



(3.0 X)



♂

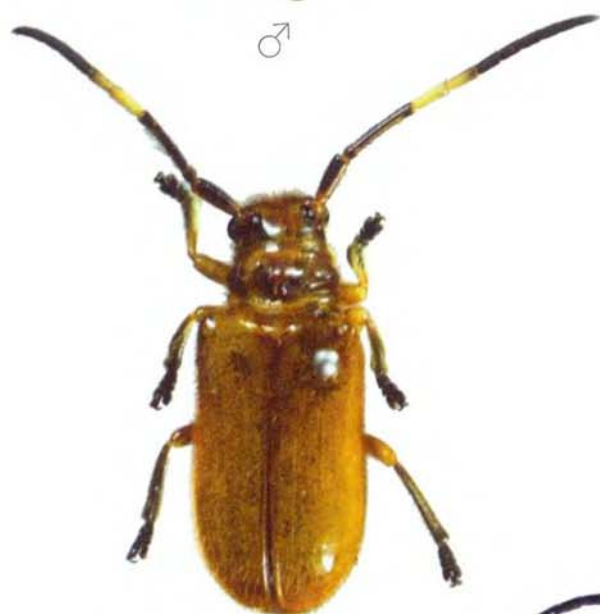
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A188. *Glenea Aeolis laosica*

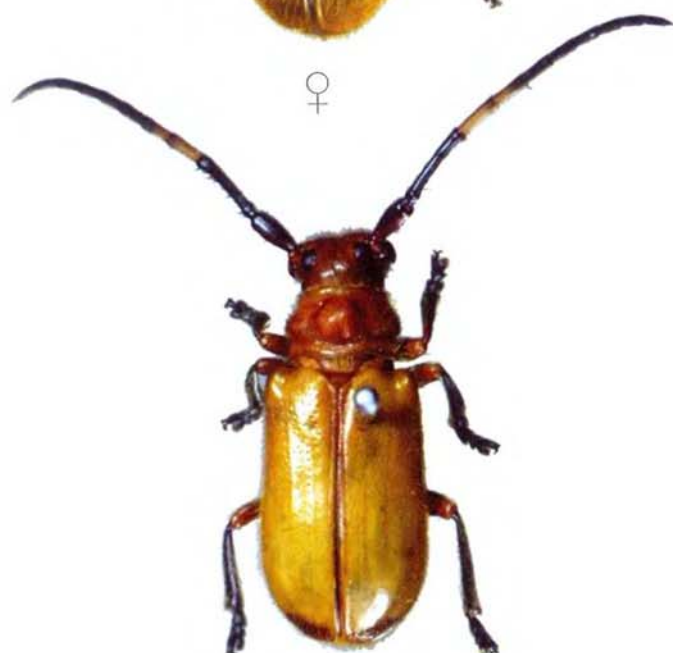
(3.3 X)



♀



♀



♀

A187. *Astathes gibbicollis tibialis*

♀ △

A189. *Glenea astathiformis*

A190. *Glenea cantor* (Fabricius, 1782)

ด้วงประดับชาย

Brown to black, clothed with pubescence brownish; head with two longitudinal stripes between the eyes; pronotum pubescence brownish interfering by four brown to black spots above; elytra pale brown with black and pubescence brownish at apices.

Length 9-17 mm.

Distribution: Philippines, China, N. Vietnam, Laos, Thailand.

A191. *Glenea elegans* (Olivier, 1795)

ด้วงประดับม่วง

Elongate black with metallic deep purple reflection above marked with white; head with two pubescence white between eyes; pronotum with three longitudinal stripes at median and lateral margins; scutellum crossed by a short longitudinal white stripe; elytra with a pair of short longitudinal stripe at middle base, three transverse rows of spots across elytra and a pair of short transverse band on each elytron near the apices and white at apical margin.

Length 28-30 mm.

Distribution: Malaysia, Sumatra, Java, Borneo, Laos, Thailand (Khao Yai).

A192. *Glenea indiana* (Thomson, 1857)

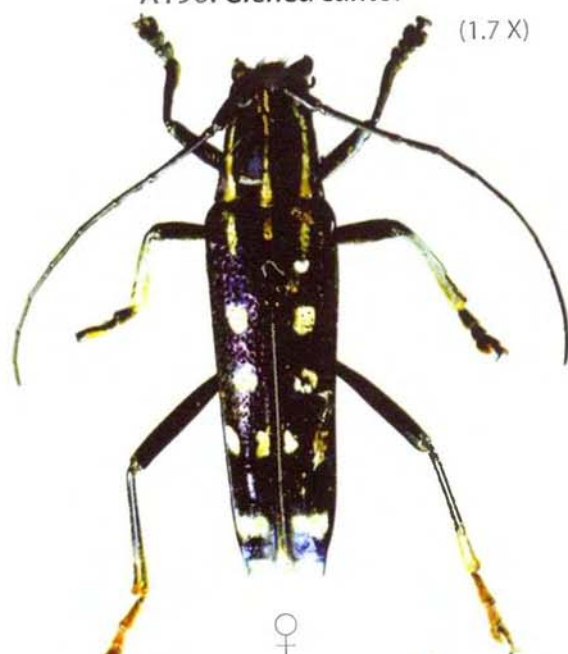
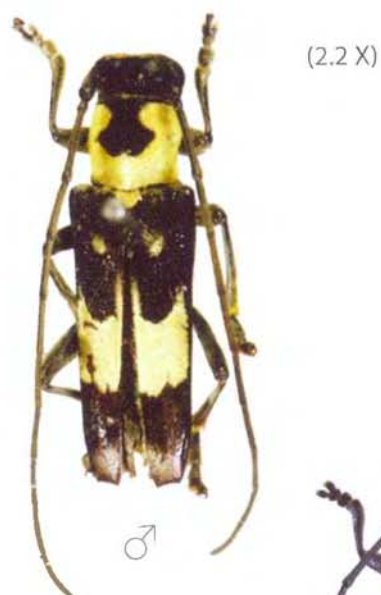
ด้วงประดับอินเดีย

Small black with pubescence white covering the base and the sides of pronotum remaining a hanging black spindle at middle front, a spot on scutellum, a broad transverse band at post-median of elytra, a pair of short transverse bands at apices of elytra, and a pair of small spots in the middle of the black basal patch of elytra in male.

Length 13-18 mm.

Distribution: India, Myanmar, N. Vietnam, Laos, Thailand (Doi Pui, Phu Khieo).

Host : *Gmelina philippensis* (ซ้อ), *Tectona grandis* (สัก), *Tabebuia pentaphylla* (ชมพูพันธุ์ทิพย์), *Dolichandrone spathecea* (แคทราย).

A190. *Glenea cantor*A191. *Glenea elegans*A192. *Glenea indiana*

A193. *Glenea laeensis* Breuning, 1956

ด้วงประดับลาว

Head black; pronotum black, with pubescence white at base connecting to lateral margins; scutellum white; elytra with black raised spots throughout, the background colored black with a narrow transverse white band at 1/5 from apices reaching the suture and narrowly turn upwards along the suture, but not reaching the outer margins, and with a pair of small paler bluish-white marginal spots at apices.

Length 9-15 mm.

Distribution: Laos, N. Thailand (Doi Pui).

A194. *Glenea mediotransversevittata* Breuning, 1953

ด้วงประดับไหล่จาง

Head black, frons with two white stripes between the eyes; pronotum black with pubescence white covering the basal and the lateral margins, remaining a black face-shaped in the middle; elytra black with two transverse white bands at the base and at the middle, and with two small white subapical spots near apices.

Length 8-14 mm.

Distribution: N. Vietnam, Laos, Thailand (Phu Khieo).

A195. *Glenea proserpina* Thomson, 1865

ด้วงประดับม่วงมัน

Elongate black with metallic deep purple reflection above, clothed with pubescence white; pronotum with a longitudinal stripe at median and a broader spot at the base; scutellum white; elytra with two pairs of large spots closer to the suture and two pairs of smaller spots near the lateral margins, and a pair of short transverse bands of paler colored near apices of elytra as illustrated.

Length 17-30 mm.

Distribution: Indonesia, Malaysia, Laos, Thailand (Wiang Pa Pao).

A196. *Glenea pulchra* Aurivillius, 1926

ด้วงประดับโลหะ

Dark metallic blue above head and pronotum while elytra dark brown tinted with dark metallic blue at base; with pubescence white spots. Head bears a pair of longitudinal transverse stripe between the eyes; pronotum with a spot at median base; scutellum white; elytra with six or more small spots on each elytron.

Length 15-20 mm.

Distribution: India, Myanmar, N. Vietnam, S. China, Malaysia, Laos, Thailand (Fang, Wiang Pa Pao).



(2.3 X)

A193. *Glenea laoensis*A194. *Glenea mediotransversevittata*

(1.7 X)

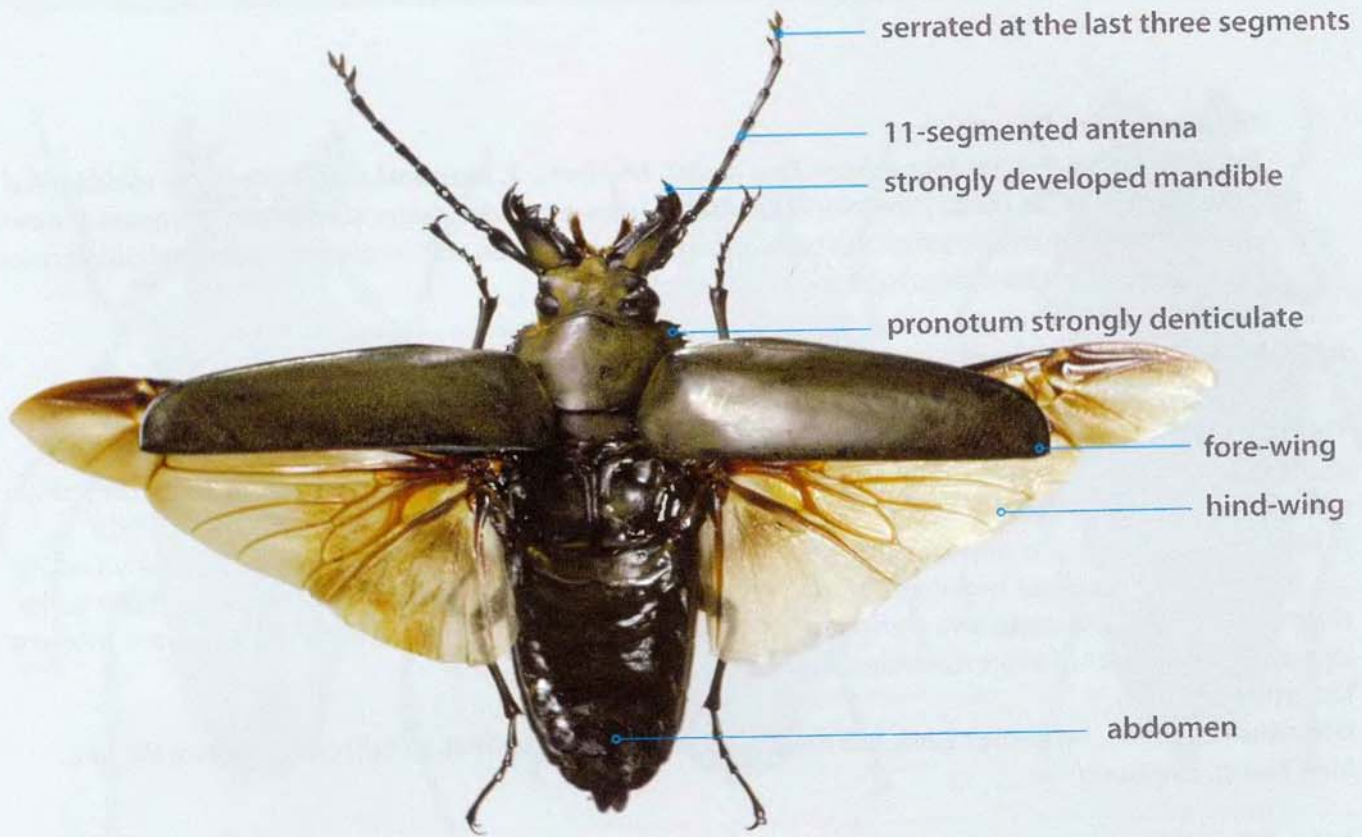
A195. *Glenea proserpina*

(2.1 X)

A196. *Glenea pulchra*

FAMILY TRICTENOTOMIDAE

The beetles of this family are slightly flattened dorso-ventrally, superficially very close to Cerambycidae by having long and slender antennae. Their mandibles are strongly developed in front and greatly bending upwards in the males of *Autocrates aeneus* which make them closely to lucanids as well. The antennae are slightly shorter than elytra, stout, 11-segmented, the last three segments serrate externally which we can distinguish them easily from Cerambycidae. There are two genera known from Thailand. The larvae of *A. aeneus* are about 12 cm long, parallel-sided. Thoracic segments rather short each bears a pair of short legs. Each of abdominal segments is long except the first segment and the terminal segments, the later bears a pair of short curved processess. I revised the name following Dr. Dmitry Telvov who is the specialist in this family.



1. Dorsal view



Figure 58. The green false-long-horned beetle, *Autocrates aeneus*; 1. Dorsal view with opened wing, 2. walking on the ground.

Trictenotoma GRAY, 1832

There are three species found from Thailand, *T. childreni*, *T. mouhoti* and *T. vitalisi* (= *waldenfelsi* DE LISLE, 1973). Dr. Dmitry the world expert on Trictenotomidae suggested that the species *T. davidi* which used by many entomologists and also in my 1st edition was wrong geographical distribution. Because this species occurs in China and Vietnam.

A197. **Trictenotoma childreni** GRAY, 1832

ด้วงหนวดยาวเทียมสีเทา

This species differs from *T. davidi* H. Deyrolle of Vietnam in bearing a big tooth at the middle of left mandible while they are two small teeth at the middle of right mandible. This species is normally known as the gray false-long-horned beetle. The body is dark brown to black, clothed with grayish-white pubescent above head, pronotum and elytra. Mandibles are black, very peculiar shapes, wrinkly surface, curved externally pointed forwards and inwards, the left mandible usually with a big single tooth while the right with two big teeth and some serrate teeth near its base. Pronotum is narrower at base than the elytra, bearing a pair of short tubercles at the middle of each side.

Length 46-65 mm.

Distribution: India, Myanmar, Laos, Vietnam, Malaysia, Indonesia, Thailand (Khao Yai, Wiang Pa Pao, Mae Taeng, Samoeng).

A198. **Trictenotoma mouhoti** DEYROLLE, 1875

This species is similar to the preceding species, but can be recognized by the different teeth on the left mandible which are 2-3 teeth at the middle edge while that of the former with only one rather large tooth.

Length 46-65 mm.

Distribution: Myanmar, Laos, Thailand (Wiang Pa Pao).

Autocrates THOMSON, 1860A199. **Autocrates aeneus** Linnaeus

ด้วงหนวดยาวเทียมสีเข้ม

The green false-long-horned beetle, Body black clothed with grayish-green pubescent above head, pronotum and elytra; mandibles in large male projecting forwards and abruptly curved upwards near the tips, with a row of serrate teeth at the inner edge of the lower part and with two small teeth near the tip of each mandible; pronotum strongly denticulate at the lateral margins; elytra smooth and shining at the losing of pubescence area.

Length 50-83 mm.

Distribution: India, Malaysia, Borneo, Thailand (Khao Yai, Wiang Pa Pao, Doi Inthanon).

(1.1 X)



♂



♀



♀

A196. *Trictenotoma childreni*(N. Vietnam)
Tritenotoma davidi

(1.3 X)



♀

A197. *Trictenotoma mouhoti*

♂

A198. *Autocrates aeneus*

REFERENCES

- Akiyama, K. and S. Ohmomo. 2000. **The Buprestids Beetles of the World**. Mushi-Sha's Iconographic Series of Insects 4. Mushi-Sha: Tokyo. 341 pp., 120 colored pls.
- Arnett, R.H. Jr.; N.M. Downie and H.E. Jaques. 1980. **How to know the beetles**. Wm.C. Brown: Iowa. 416 pp.
- Arrow, G.J. 1910. **The Fauna of British India, Including Ceylon and Burma. Coleoptera, Lamellicornia (Cetoniinae and Dynastinae)**. Taylor and Francis: Berlin. 322 pp.
- _____. 1917. **Fauna of British India, Including Ceylon and Burma. Coleoptera, Lamellicornia Part II (Rutelinae, Desmonycinae and Euchirinae)**. Taylor and Francis: London. 387 pp., 15 pls.
- _____. 1931. **Fauna of British India, Including Ceylon and Burma. Coleoptera, Lamellicornia, Part III (Coprinae)**. Taylor and Francis: London. 428 pp., 13 pls.
- _____. 1949. **Fauna of British India, Including Pakistan, Ceylon and Burma and Malaya, Coleoptera, Lamellicornia, Lucanidae and Passalidae**. Vol. IV. Today & Tomorrow: New Delhi. 274 pp., 23 pls.
- Chunram, S. 1973. **Taxonomic Studies of Thai Metallic Wood Boring Beetles in the Tribe Chrysochroini (Coleoptera : Buprestidae)**. M. Sc. Thesis, Kasetsart University. 74 pp., 152 figs.
- _____. 1990. **The Blister Beetles in Danger**. 7th Seminar Proceeding, Entomology and Zoology Division, Department of Agriculture, Bangkok. p. 133-152.
- Chujo, M. 1961. **Coleoptera from Southeast Asia, Nature and Life in Southeast Asia**. Vol. 1: 357 pp., 12 pls.
- Dillon, L. S. and E. S. Dillon. 2004. **Olenecamptus, Tribe Dorcaschematini (Coleoptera: Cerambycidae)**. Transactions of the American Entomology Society. p. 229-298.
- _____. 1961. **Coleoptera from Southeast Asia, Nature and Life in Southeast Asia**. Vol. III: 161-315.
- Ek-Amnuay, P. 2002. **A Handbook to Interesting Beetles of Thailand**. 1st edition. Bangkok: Ban Lae Suan. 408 pp.
- Flower, W.W. 1912. **The Fauna of British India, Including Ceylon and Burma, Coleoptera, General Introduction and Cicindelidae and Paussidae**. Taylor and Francis: London. 925 pp.
- Gressitt, J.L., J.A. Rondon and S.V. Breuning. 1970. **Cerambycid-beetles of Laos (Longicornes du Laos), Pacific Insects, Monograph 24**. Entomology Department, Bernice P. Bishop Museum : Honolulu. 651 pp.



- Hardy, K.W.; P.M. Hammond and F. Severa. 1984. **A Field Guide in Color to Beetles. Octopus Books : Czechoslovakia.** 334 pp.
- Hawkeswood, T. 1987. **Beetles of Australia.** Angus & Robertson: Hong Kong. 248 pp.
- Hutachroen, S. 1990. **Forerist Insects of Thailand.** in Thai, 2nd edition, SangThian Kan Pim: Bangkok. 171 pp.
- Kawano, K. 1988. **Why are the horns of Rhinoceros Beetles so elongated ? Evolutionary process through competition among males II.** Gekken-Mushi, 208: 8-16.
- _____. 1988. **Why are the horns of Lucanid Beetles so imposing ? Evolutionary process through competition among males II.** Gekken-Mushi, 221: 8-15.
- _____. 1989. **Evolutionary Mechanism in Lucanid Beetles – Evolutionary process through competition among males III.** Gekken-Mushi, 220: 16-23.
- _____. 1990. **Geographic Variation of Dorcus curvidens and Its Speciation.** Gekken-Mushi, 233: 9-16.
- Mizunuma, T. and S. Nagai. 1994. **The Lucanid Beetles of the World.** Mushi-Sha : Tokyo. 337 pp., 156 colored pls.
- Mizunuma, T. 1999. **Giant Beetles, Euchirinae and Dynastinae.** Endless Collection Series, Vol 3. Sansho : Tokyo. 122 pp.
- Navioux, R. and Pinratana, A. 2004. **The Tiger Beetles of Thailand (Coleopera, Cicindelidae).** Sunprinting : Bangkok. 177 pp.
- Ohmomo, S. and K. Akiyama. 1997. **Jewel Beetles.** Endless Series, Vol. 2 Sansho: Tokyo. 59 pp.
- Ohmomo, S. 1999. **Two new species and a new subspecies of the genus Chrysochroa (Coleoptera, Buprestidae) from Asia Tropics.** Gekkan-Mushi, 344: 1-4.
- _____. 2004. **Notes on Buprestid Beetles (Coleoptera : Buprestidae) from Thailand, V.** Ent. Rev. Japan, 58 (2): 151-156.
- _____. 2004. **Notes on Buprestid Beetles (Coleoptera: Buprestidae) from Thailand, VI.** Ent. Rev. Japan, 59 (2): 145-151.
- _____. 2007. **Buprestid Beetles of Thailand.** Konchu to Shizen, 42 (12): 25-28+pl1. **(Coleoptera, Insect) of Thailand.** Sumiyoshi 1-12-4, Ami-machi.

- _____. 2007. **A Catalogue of the Family Buprestidae (Coleoptera, Insect) of Thailand.** Sumiyoshi 1-12-4, Ami-machi, Ibaraki-ken 300-1151, Japan.
- _____. 2008. ***Chrysochroa edwarsi* species-group in the Northern region of Indochina.** Gekkun-Mushi, 444: 25-28.
- Pinratana, A. and J-M. Maes. 2003. **Lucanidae of Thailand.** Sunprinting : Bangkok. 247 pp.
- Sakaguti, K. 1979. **Insects of the World I, Southeast Asia I, Including Australia.** Hoikusha : Osaka. 256 pp.
- Sakai, K. 1996. **Flower Beetles.** Endless Collection Series, Vol. 1. Sansho: Tokyo. 52 pp.
- Sakai, K. and S. Nagai. 1998. **The Cetoniine Beetles of the World.** Mushi-Sha: Tokyo. 421 pp., 144 colored pls.
- Stebbing, E.P. 1914. **India Forest Insects of Economic Importance, Coleoptera.** Eyre & Spottiswoods : London. 648 pp.
- Triplehorn C.A. and N.F. Johnson. 2005. **Borror and Delong's Introduction to the Study of Insects.** Seventh edition. Brooks/Cole, Thomson: Belmont, California. 864 pp.
- Tung, V.W. 1983. **Common Malaysian Beetles.** Longman: Kuala Lumpur. 142 pp., 32 colored pls.

GLOSSARY OF TECHNICAL TERMS



Abdomen - the last part of the three divisions of the body of an insect.

Angulate - forming an angle, when two margins or lines meet in an angle.

Antenna (pl. antennae) - segmented sensory organ.

Antennal club - the enlarged distal segment of the clubbed antenna.

Anterior - in front, before

Apex, apical - the distal or outer extremity of a part.

Bidentate - having two teeth.

Bifurcate - divided into two, forked, bifid.

Callus - a rounded swelling often occurring near the shoulder and apex of each elytron.

Canthus - the chitinous process more or less completely dividing the eyes of some stag beetles into the upper and lower half.

Cleft - forked or split.

Clypeus - a sclerite, between the frons and the labium on the lower part of the face.

Compressed - flattened in the vertical plane.

Concave - curved inwards like the inner surface of a sphere or ball.

Constricted - narrowed.

Convex - with the surface curved like the outside of a ball, opposed to concave.

Costa (pl. costae) - any elevated ridge upon the elytron.

Coxa - the basal segment of the leg.

Dentate - toothed.

Depressed - flattened down as if pressed.

Dilated - widened or expanded.

Diurnal - active during the daytime.

Dorsal - belonging to the upper surface.

Dorsum - the back or top side.

Elevate, elevated, of a part - higher than its surroundings

Elytron (pl. elytra) - a thickened forewing.

Emarginate - notch or indented.

Epimeron (pl. epimera) - the posterior division of a thoracic pleuron.

Excavate - hollowed out.

Femur (pl. femora) - the segment of the leg between trochanter and the tibia.

Fringe - an edging of hair, scales or other processes extending well beyond the margin and usually of even length.

Frons - an impaired sclerite on the front of the head.

Grabrous - smooth, hairless.

Granulate - cover with small grains.

Humeral - relating to the shoulder or humerus.

Lamella (pl. lamellae) - a thin plate or leaf-like process.

Larva (pl. larvae) - caterpillar or grub.

Lateral - on or pertaining to the side.

Longitudinal - lengthwise of the body.

Mandible - one of the anterior pair of the mouth part, a jaw.

Mandibular - of or pertaining to the jaws or mandibles.

Margined, marginated - with a sharp or keel-like lateral edge.

Median - in the middle, on the mid-line of the body.

Mesepimeron - the epimeron of the mesothorax.

Mesothorax - the second or middle segment of the thorax which bear the middle legs and the fore-wings.

Metasternum - ventral sclerite of the metathorax.

Metathorax - the third or last segment of the thorax which bear the hind legs and the hind-wings.

Nocturnal - active at night.

Ocular - of or pertaining to the eyes.

Opaque - dull, not reflection light.

Pleuron (pl. pleura) - the lateral region of any segment of insect body.

Postmedian spot - a spot situated above or behind the middle.

Predator - an animal that preys and feeds on other animals.

Pronotum - the dorsal sclerite of the prothorax.

Prothorax - the first segment of the thorax.

Pubescence - a clothing of soft hair.

Pubescent - covered with short fine hairs.

Puncture - a small pit or impression.

Pygidium - the last dorsal segment of the abdomen.

Rugose - having an irregularly wrinkled surface.

Scape - the first, or the basal joint of antenna.

Sclerite - a hardened body wall plate bounded by sutures.

Sculpture - the markings or pattern of impression or elevation on an elytron or other body surface.

Scutellum - the part of mesonotum interposed between the elytra.

Segment - a subdivision of the body or an appendage.

Serrate - with a saw-like edge.

Seta (pl. setae) - a bristle.

Sinuuated - cut into sinuses, wavy, specially the edges or margins.

Sparse - thinly scattered.

Spine - a thorn-like outgrowth of the cuticle.

Sternum (pl. sterna) - the entire ventral division of any segment.

Striate - bearing parallel grooves.

Stripe - a longitudinal streak of color different from the ground.

Suffused - clothed or obscured by a darker color.

Supraorbital - situated above the eyes.

Spur - the movable spine.

Suture - the meeting line of the two adjacent edges (especially the elytra).

Tarsus (pl. tarsi) - the segment part of the leg beyond the tibia.

Thorax - the body region between the head and abdomen.

Tibia (pl. tibiae) - the segment of the leg between the femur and the tarsus.

Tibial spur - a large spine located at the distal end of the tibia.

Tribe - a subdivision of a subfamily, end in -ini.

Trochanter - the segment of the leg between the coxa and femur.

Truncate - ending abruptly, as though cut short.

Tubercle - a small knob-like or rounded protuberance.

Tuberculate - bearing small sharp elevations

Ventral - belonging to the lower surface.

Vertex - the highest point or the top of the head.



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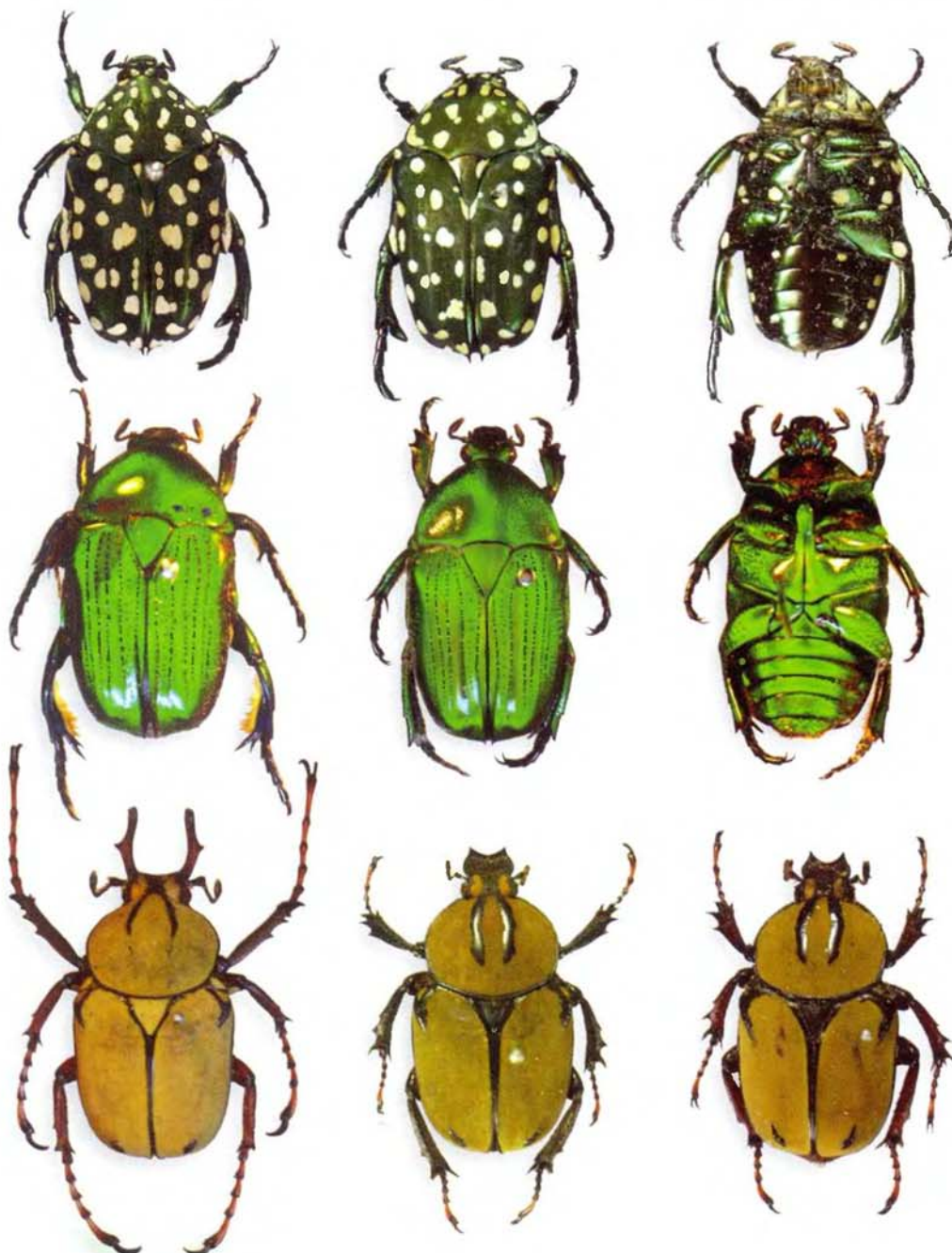
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The author





The author studied Entomology since 1974 and got a Master degree of Science in Entomology from Kasetsart University in 1982 by completing a taxonomic study on dragonflies, Libellulidae as the thesis. He has collected all kinds of insects as a hobby and built up a private collection since then and after thirty years of experiences he become more specialized in butterflies and beetles. This book is one of the results from his consequent effort.

The author worked for Entomology and Zoology Division, the Department of Agriculture for 7 years and moved to work for agro-chemical companies for about 20 years until now. He has been assigned as an Adjunct Professor in Entomology for Graduate School, Kasetsart University which is a contributed job. He likes taking photograph and has a private library of photos on insects, pests, diseases and plants. He also wrote a handbook on insect pests which was entitle "Plant Diseases and Insect Pests of Economic Crops". The first edition was sold out in one year. Anyhow, the second edition already printed and available now. Another small book in Thai, a guidebook for Breeding and Rearing Beetles, with 120 pages was printed by the same publisher at more or less the same time as this book.

The enthusiastic of the Thai people on the nature and insects becomes higher since the last five to ten years after we have a number of good books on insects available. The digital camera fever is also stimulated the interests of people to look for natural scenes including butterflies, dragonflies, beetles and other insects. So, hopefully this book will be a guidebook for them to study further on beetles in their photos.

About the author's family, he married Jeeranoot who works for the Department of Agriculture. They have two sons. The elder son, Mr. Suttha Ek-Amnuay graduated in Architecture from Silpakorn University almost two years ago. He works for Siam Insect-Zoo, learning insects by doing and adapted very well in insect breeding especially beetles. While Mr. Thanasith Ek-Amnuay is studying hard in Dentistry at Mahidol University for the fifth year.

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Other books written by Mr. Pisuth EK-AMNUAY

Corrigenda to the Beetles of Thailand

p14. Butterfly Names --> Beetle Names

p18. Fig2. --> *Eupatorus gracilicornis*

P31 T3. should read *Neocollyris*

bonellii bonellii

p78 line 18 --> *C. pahangensis*

p132 Fig21 --> *Chalcosoma caucasus*

p145. S5. --> *Eophileurus chinensis*

P199 cooperating--> copulating

P269 B19. *buaueti*--> *buqueti*

P375 A63. *dimidiate*--> *dimidiata*

p401. Fig55. should read Long-

horned beetles; 1. larva, 2.

adult of *Batocera rufomaculata*,

3. *Batocera victoriana victoriana*

p402 Fig56 --> *Ioessa sanguinolenta*

P404-5 --> *Mesosa nigrofasciaticollis*

P411 A113. *variegata*--> *variegata*

P97. photo of L50 should be replaced by this photo:



L50. *Prosopocoilus mohnikei*

p53. L8 ♀ of *Hexarthrius parryi*

---> ♀ L40a *Rhaetulus speciosus*

p91. L46 ♀ (middle) of *P. giraffa*

---> ♀ L67 *Dynodorcus antaeus*

p93. L470a ♀ of *P. inquinatus*

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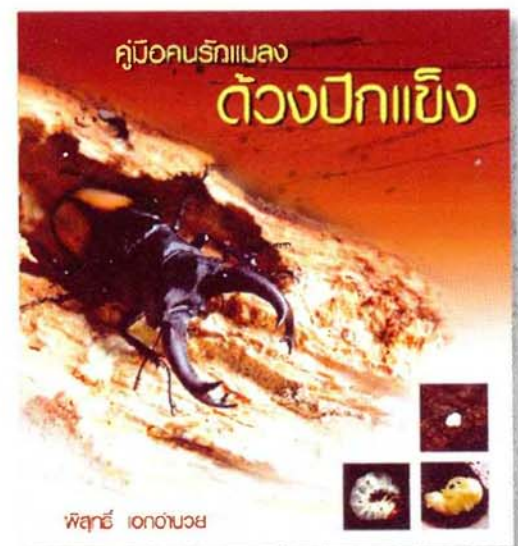
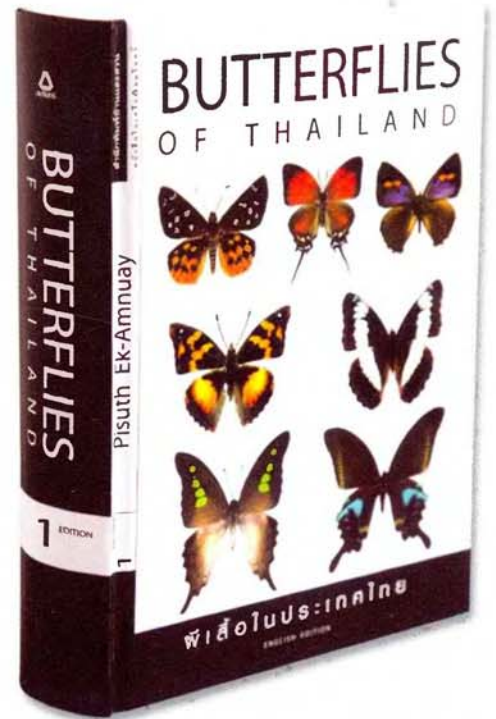
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